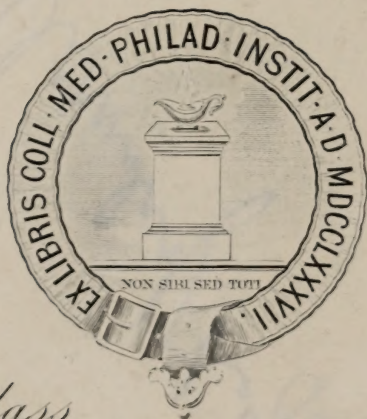


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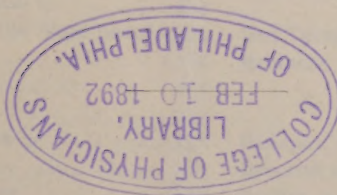
J. F. Edwards, M.D.

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COMMUNICATIONS

Working Hours and Working Men.

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Of London, England.

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SOME USEFUL LESSONS.

THE lessons that arise from correct knowledge on these points are numerous, and have a particular bearing on the question of hours of work. The first lesson is one in which all interests are equally concerned. The master is concerned in it, the workman is concerned in it. The lesson is that when a man is working at one particular thing, which keeps one particular organ or set of organs constantly at work, nothing can be gained by keeping up the time of work too long without cessation. I have tried to ascertain if there is any sort of work in which this rule fails to hold good, and I find none. If the work be entirely muscular, the rule is wonderfully sound. The best mechanical work is always that which stops on this side of actual weariness. To put the matter in a nutshell, an overstrained workman is, for the time, a bad workman and a dear workman, whatever his will and his skill may be. He is disabled in that part of his body that has been particularly taxed, and in that part he must be rested and recruited before he can with perfect health and strength resume his employment.

But what is the full time for the running down, if I may so call it, of the powers of the body each day, under steady, hard, muscular work, not calling for much mental exertion? I should fix it, from our side of the question, at one-third of the twenty-four hours of the day, or half the waking hours; that is to say, the same period as should be devoted to that entire rest, chiefly in sleep, which is needed in order to restore the body to its full power, and to regulate the balance of power.

This is the first lesson, in which nothing except bodily work has been noticed. Let us refer to another state of things, in which mental work, a much sharper master, comes on the scene. I have never yet met with a pure mental worker who could keep up good mental work day after day for six hours. When, therefore, any work exercises the mind as well as the body; when to

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mental labor responsibility and anxiety are added ; when the work put upon the heart increases largely ; when the mainspring and prime regulator of the whole animal machine is oppressed, and all is cross-grain and uncertain ; when the mind becomes irritable as the muscles become wearied ; and when that which was readily seen and easily done at the commencement of the work demands more than ordinary care, must, practically, be twice done, and, after all, without proper satisfaction, then the necessity for the eight hours' rule becomes absolute.

Let us look round and pick out one or two kinds of work as examples coming, in this way, under the rule of regular eight hours. I should put engine driving at the head of these representative kinds of work in which mind and body are severely taxed together. The engine driver is taxed all round ; he has much to do that calls the muscles of his body into active work ; he is unable to rest ; he is exposed to great changes of heat and cold, wind and rain ; he has to bear the rapid friction of the air over the surface of his body, and from minute to minute, for hour after hour, he is obliged to have his most active and laboring senses, his sight, his hearing, his touch—yes, and his sense of smell, too—persistently on guard. To all is added the hidden weight of responsibility—a weight which springs from the whole of the work put together, and with something else behind, which men call conscientiousness, or conscience, which intensifies the mental and physical strains. I am quite convinced that in respect to bodily and mental health, such kind of work ought never to exceed eight hours out of the twenty-four hours of the day. It is bad all round that it should exceed this strain ; bad, because dangerous to the public, which depends for its health and life on the judgment and skill of the driver ; bad for the endurance of the man himself, and bad for those who pay him for his services ; bad because the men who accept such responsible labor—although they may keep at it for some years, in spite of the overstrain—become prematurely old ; at sixty or so are aged so that people begin to say of them, and they begin to say of themselves, that they are getting past work, when, in truth, this is just the time when they ought to be in the full swing of a ripe and useful experience, and in a condition most serviceable as laborers for the general good—laborers for that garden of the world they are sent to cultivate and help to bring to perfection.

By argument quite independent of politics, commerce or economy ; by argument based simply on the study of man himself as a working unit—the physician's argument, if you like to consider it so—I venture to declare that eight hours is the extreme limit of labor compatible with healthy life, for all callings of the character above described.

There are some other callings which, on account of their monotony and steady wear and tear from constant work, require the same regular limitation of time. The postman is an excellent illustration of the class of worker included under this head. The work of the postman is one continuous, busy go-round ; he is on his feet during the whole of his working hours, except in the few, far too few, instances, in country districts, where he is able to use a

velocipede. The result is that the postman wears out too fast. The late medical officer to the General Post-Office, Dr. Waller Lewis, was fully alive to this fact. He referred to it in his reports, and he several times spoke to me about it. There were some men, he told me, who sustained the tedious labor fairly; but none bore it well, and the weaker ones badly. The effect, generally, was to produce a premature old age; in other words, shortening of the life of the worker.

Lastly, hardest muscular kinds of work demand, for the best reason, limitation of hours. Among those of us who have studied this subject most carefully, there is, I believe, little difference of opinion. We should, I think, be unanimous that the strongest man ought not to perform, day by day, work that should call forth more than 250 foot-tons of energy, or rather more than twice the natural work of the heart. But in some work this amount is increased over a third. In the work of the dock laborer it runs up to 315 foot-tons; in the pile driver and pavior to 340, and in a few others to 379. Here the eight hours' rule, at least, is absolute for health. We could not put such a strain on an engine that was not made to bear it without breaking the engine down; and we cannot put it on a man without the same result.

SOME OBJECTIONS ANSWERED.

I wait here to anticipate some objections which may arise. One man will say to me: "You are calculating up the human body as if it were a steam engine; all very well as a doctor's calculation, but of no sense for a practical man." I answer: "If you work a steam engine, you reckon up its working power to the uttermost farthing; and if you strain it, wear it out or blow it up, you take the consequences." "Of course," will be the reply; "but then a man is not an engine. A man has a will, and a mind of his own, which alters everything." How so? I think that only makes matters worse. The man's will is expressed by his vital powers, just the same as his strength to work is; and if his will chafes under his work, the work is so much the harder. Do you imagine that if the steam engine were endowed with a will, and you had to govern the will as well as the work of the engine, the work would be less wearing to it? Why, it would be all the more wearing; and if, after great oppression, the engine, at full strain, blew itself, and you with it, into atoms, you need not be surprised.

No; this is a question that is essentially a doctor's question, for the simple reason that it is the study of the doctor to find what the human body and human mind can and cannot bear. If he does not understand this, who does? Some day it will be a doctor's question out and out, and in that department of medical science and art which relates to the treatment of the most useful of the lower animals, the horse, it comes already into immediate service. A well-informed veterinary surgeon will calculate the life value of a horse with the greatest ease by the age and character of the animal, in combination with the work which the animal will have to perform. Mr. Field, of Oxford Street, Loudon, one of the soundest veterinary surgeons I ever knew, was once advis-

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ing me about the purchase of a horse I had sent to his "whispering gallery," as he called his testing yard, in order to find if the animal were sound in "wind, limb and eyesight." I asked him what length of work there was in the animal. "For your work," he said, "good ten or eleven years; for my work seven or eight; for a London omnibus, three to four. It is chiefly a matter of work and strain on the heart." "Has temper nothing to do with it?" "Yes; if he is a fretful, unwilling or wilful animal, you may take off a good fourth from the working value of your purchase."

The objection named above is not difficult to meet. But there is another which claims to be very strong. Its supporters reason in this way: They say that if people didn't die from work they would die from pleasure, and that it is better to wear out from work than from luxury. A rigid teetotaler will turn on me and ask, "What is the injury which work, and hard overwork, puts upon the heart and life of a man compared with the work and overwork, the wear and tear, which strong drink inflicts on those who indulge in it? Are not," he inquires, "beer and stout, and wine and brandy, and gin and whiskey, and rum and shrub as hard taskmasters as the hardest master who can be found looking over a gang of laborers, or superintending a workshop?" I do not dispute that strong drink is the hardest of masters; I know quite well that it weakens, lowers and kills just as overwork does; I am not ignorant of the fact that, doing no service whatever to anybody, all the fluids mentioned add to the work of life and hasten death. I know that the Divine Creator of our animal bodies chose that they should work by the use of water, just as we inferior creatures ordain that our most powerful and useful engines, engines that transport us over land and sea, shall work altogether by the use of water turned into steam and condensed back into water. I am quite aware that if I were to tamper with the work of a perfect steam engine by drenching it with beer, stout, wine, brandy, whiskey, gin, rum, or any other of these mischievous nuisances, I should soon knock that beautiful structure into what is vulgarly called "a cocked hat," which means, I suppose, a hat that is easily shut up. I know, of course, that if men were to drench omnibus horses with the same vile compounds as human beings drench themselves with, the omnibus companies would soon come to an end with the animals they had poisoned. I know that if the cattle on a thousand hills were to be drenched in a like manner, there would very soon be few that were tamable, few that were workable, few that were eatable. What is more, I know that when men, working men or idling men, drench themselves with these fluids, their hearts and lungs, and livers and kidneys, and stomachs and brains and nerves, wear out at an alarming pace, faster than from hardest work. I am quite aware of these facts. I remember—and it is a useful fact for all of us to remember—that if a man in perfect health and strength puts into his stomach in the course of a working day four fluid-ounces of spirit in the form of any of the common alcoholic beverages, he gives his heart an additional twelve-foot tons of work—not a pleasant addition to a day's hard work, even for a coalheaver, and an addition which is fearfully injurious to all parts of the body that the heart feeds with blood. Knowing so much,

then I admit the teetotaler's argument so far as it goes. And how far does it go? Just to the extent that two blacks do not make a white, and not a step further. If an engine driver or a postman, or anyone else, likes to add to the proper work of his life so much more work, and, under the delusion that he is strengthening himself by indulging in the use of the greatest of all paralyzers, doubles his work by drink, so much the more speedy will be the downfall of his life. Such addition to work, however, has nothing to do with the question of his daily work, for a man might be making the same expedition toward death from drink if he were riding in a chariot, or were seated in a chair of state, calling out for his three vintners, like Old King Cole.

There is yet another argument brought against limitation of useful work, namely, that those who have nothing to do constantly perform the hardest work for their own gratification. Some do this in boating, some in hunting or field sports generally, others in wandering about the earth, and not a few in that everlasting mill at Westminster, to which the people periodically sentence a certain number of themselves to grind away, session after session, until all is blue above and chaff below. Admitted that many who need not work at all are worked so terribly, what does it mean? It means simply that man was made for work; that he is forced, will he, nill he, to help cultivate the garden of the world; or to change by a word or two the speech of the gravedigger in *Hamlet*: "Here lies the work; good! here stands the man; good!" If the man will not go to the work, the work will come to the man. But this does not alter the question one bit, because when these self-acting slaves do apply themselves to slavish labor, they shorten their lives by the slavery—a sort of suicide for which they alone are responsible.

Not one of these arguments, nor any other with which I am acquainted, touches the proper limitation of labor in such occupations as those to which special reference has been made, and their likes: The occupation of the engine driver, calling for mental as well as physical strain; of the postman, calling for unceasing wear, and of the hard muscular worker. I choose these as typical or representative labors, but there are many more like them. Some years ago I made a study of the value of life according to occupation, and found a certain number of occupations which presented alarming figures, showing the shortening of life connected with them. I found, out of forty-two of the chief industrial occupations, no fewer than thirty showing a mortality above the average, and in some cases far above the average. For example, taking 100 as the average figure, I found that 138 potters died instead of 100; 129 bargemen instead of 100; 121 dock laborers instead of 100; and so on, with rather more favorable returns to other workers, who, though dying above the average, were more favored because, although overworked, they enjoyed somewhat better conditions of air, of food and of clothing. I discovered, also, one particular fact, showing how in the selfsame business hard overwork each day will reduce the value of life. I took the blacksmiths of the country and the blacksmiths of Marylebone, in London, from Dr. Dundas Thompson's tables, and found that while the deaths of the country blacksmiths were 19 per 1,000, those of Marylebone were

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31. In the country the blacksmith is a healthy man ; he rises early and works moderate hours, say ten daily ; in London he rises early and works twelve hours. In the course of his life he can strike, between the age of twenty and sixty, 36,000,000 blows on his anvil, 3,000 each day of ten hours ; but when two extra hours, with 600 blows more are laid on him per day, there is added in the year sixty more working days, and in five years one whole year more of work—a full and sufficient reason, in combination with his unhealthier surroundings, for his shorter life. I pointed out, when these calculations were made, some rearrangements by which these excessive hours of labor could be reduced, and urged that every occupation showing deaths above the average from overwork should be forced to reduce hours of work ; for, I reasoned, what economy can it be to a nation or employer to inflict on working people labor to the extent of destroying the health and shortening the life ? Many years have passed since this was said, and nothing has been done in a systematic manner, and so I repeat the recommendation. I repeat that, the facts being in the full possession of the nation, there ought to be inquiry on all sides how best the serious differences of labor in their effects on health and life can be so adjusted that health and life shall be better preserved. This is a duty that ought not to be left to the workers alone to rectify. They will, no doubt, rectify it, but they are too closely confined in winning bread for themselves and their families to be able to look into the matter calmly and sufficiently ; and this is a pressing matter every one ought to look into, for the sake of the great reformation that is required for the interests of those who do not work at injurious callings as well as of those who do ; since bad health from overwork brings feverishness, restlessness and sometimes conditions of mind bordering on desperation which lead to uncontrollable action and general misery.

In the reformation which has to come, and which is on the horizon, the process of measuring out time for work holds a first place. I teach now, as I have taught for many years, that for health's sake eight hours is a fair average. I do not put it as absolute. There are occupations in which eight hours are really too long, because all the time the labor of the body, or of the attention, or of both, is too severe. There are occupations in which the body is bent all the time of work, until at last actual deformity of the body takes place from long hours. In all such occupations the time should be limited to or within eight hours. There are, on the other hand, occupations where, although the hours may be long, the work is only by fits and starts, so to speak, with considerable intervals of rest between. In such cases ten, or even eleven, hours may be comparatively harmless, if the surroundings are healthy, and the habits of the worker wholesome and sound.

RESPECTING HOLIDAYS.

Before I conclude, you will expect me to say a word or two about recreation and holidays. To secure recreation is to recreate the body and the mind. In proper recreation we call into play muscles which have too long lain idle, and which require exercise. We bring also into play portions of the brain, the

organ of the mind, which have too long lain fallow, and in this way take in new pictures of the mind and lay them by, as we lay by beautiful drawings in our books and cabinets to keep and enjoy. Thus, the brain becomes a treasure house, and a fine treasure house it may be made, I can assure you. I believe that nine hundred and ninety-nine out of every thousand persons do not furnish ninety-nine parts out of a hundred of their brain treasure house—a sad omission. Every good sanitarian goes in for good recreation and good holiday-making, and for none so much as for those who work hardest. We are, I hope, all agreed on this principle; but, it may be, we are not all agreed that all sanitarians are not strictly agreed as to details. I will state my views, trusting they may be yours; and if they are not, we will not quarrel, but, agreeing for the moment to differ, will reconsider the point more carefully.

THE DAY OF REST.

First, then, we have, fortunately for us all, fifty-two days in the year which are set apart as days of rest; and I pray you let no one mislead you in the attempt to sacrifice the day in which you shall do no manner of work. Our wise and discerning friends, the Jews, have given us this advice, and have acted up to it. They have kept their own day of rest rigidly, perhaps too rigidly—as, for instance, in the case of a Jewish neighbor of mine, who, having folded up a newspaper the evening before her Sabbath, brought it to our garden wall on her day of rest, that I might address it and post it. But there is not a shadow of doubt that to the Jews as a people the seventh day has been a day of life, and through the ages a mainstay in their checkered and often unhappy career. Let us keep it also as a day of happy, healthy rest.

Our old Puritan fathers made it a penance, and you may perhaps remember the picture of one of them, told by a satirist who knew them:

"From Salisbury came I, O profane one!
Where I saw a Puritane one,
A-hanging of his cat on Monday,
For killing of a mouse on Sunday."

Well, I like the Puritans, and some say I am a little infected with their views; but I do not agree with them on this subject. Our Sunday, the first day of the week, takes its name from the sun, and, to my mind, ought to be, like its namesake, pure, unclouded, bright, warm and cheerful. Let our good friends, the teachers and preachers of religion, tempt us into their temples as much as ever they can; but let nothing interfere with the rational recreation and rational pleasure of the day. Let nothing interfere with our communion with the Lord of Nature in all His works and ways. One of my medical predecessors, Aken-side, wrote for us:

"The men whom Nature's works can please
With God Himself hold converse. Grow familiar,
Day by day, with His conceptions, act upon his plans,
And form to His the relish of their souls."

The words are true. They are near to God, who, drawing near to His works, know Him in His own mighty temple of earth and sky, as well as in the tem-

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ples of wood and stone which men erect to His worship and His honor. And near also to Him are they who seek the works of that poet, sculptor, painter, writer, teacher, who best interprets Nature in her simplicity, her power, her virtue, her beauty and her glory.

WEEK-DAY RECREATION.

Keep Sunday well as a first determination, but in every day of the week some recreation is also required, and in coming days of eight hours for work, healthy and pure recreation will have to be provided for each day. This will create, in my opinion, a good result, not only in the pleasures of those who by work earn the refreshment of play, but in relieving the labor market itself, by providing new and varied occupations for those who minister to the public entertainment. One of the sterling characters whom Charles Dickens invented for us says: "People muth be amuthed." They must, and there must be good workers to supply the amusement. Already this class with the school teachers are increasing in the most remarkable manner. In the increase of the population the ministers of religion keep on a level with the people; the lawyers go a little ahead; the doctors fall far behind; but the schoolmaster and mistress, the musician, the player and public reader are miles ahead, some more than double the rate of the general increase. This is a relief to all the classes from which these popular workers spring; and, just as good recreation is demanded, so will more and more artists be called to play their parts. I hope, for the sake of health, that good music will play a first part, for music is the soul of innocence, and good music means good health. He who can sing well is well. I asked once of an anxious mother, whose child I had left at night with a fear lest it would ever be seen by me again alive—I asked, almost with fear: "How is Bonnie to-day?" "Listen, doctor!" was the delighted reply; "Listen! She is singing; she must be safe now." It was a simple woman's simple inference, and correct to the letter.

This subject of amusements for working men is a serious as well as a happy one for all, but especially for those who have to work hard each day. To these recreation has never yet come in good form. Obligated to take just what they have found ready to hand, in the public-house, the low music-hall or saloon, the commonest games, the cheapest theatres, they have been blamed by the wealthier classes for their low tastes. I do not participate in this feeling. The finest rendering of the "Messiah" I ever listened to was one in which some hundreds of working Yorkshiremen at Leeds made the choruses; and, yearly, in the great national gathering in Wales, the best music and song are to be heard. These facts give contradiction direct to the assumption that men who work all day must seek low pleasures. The simple truth is they never have had time or opportunity to seek and taste pure pleasures. Give them time and opportunity, and they will both seek and find that, as to the pure all things are pure, so to their healthier work healthier pleasure must be added, in newer, better and more varied classes of entertainments and entertainers.

BANK HOLIDAY.

I touch, lastly, on general holidays ; and here it is, I fear, that I may differ from some of you. When, a few years ago, a most estimable, earnest and useful public man, Sir John Lubbock, was fighting for bank holiday, I did all I could, with pen and voice, to back up his good work. I am glad of having done so, for I think his was exceedingly good work. It was a capital start for popular holidays, and it was, perhaps, the only start that was possible at the time. But, watching the result, I am forced to say that reform is wanted. The bank holiday is too short, too tumultuous, too head over heels, to be recreation in a healthy sense. If the weather be good, the holiday may be tolerable ; but if the weather be bad, it is absolutely injurious, a mere scratch holiday, giving rise to discomfort, vexation, sickness, and, it may be, days of after-suffering, for which no holiday compensates. I was present at one of our favorite watering places, in August, 1888, during "the holiday" in a deluge of rain. The misery of the unhappy tourists was indescribable. Even the post-office was filled with the drenched visitors, seeking for shelter and wishing for home.

The change that seems to me necessary is to give to the working people the same opportunities for rational holidays as belong to others who consider themselves more favored. Let them have their holiday ; not at a fixed time for the whole in a body, but for each one and each family, at convenient times ; not for a day or two, to the injury of trade and general inconvenience, but for a week or fortnight, or longer still, for purposes of health and recreation. This would be holiday in earnest, and I speak from direct practical knowledge in saying that no plan is more easily carried out.

THE CONCLUSION.

The sum and substance of my message as a physician and sanitarian is, that for health's sake and life's sake, for the health and life of the nation, as well as of the individual parts of it, the shoulders of labor require a great deal of lightening. An example, bearing to millions of minds a meaning beautiful as it is forcible, requires to be set. The yoke must be made easy, the burden light, before the healthy heart can beat out to its full days the healthy body and the healthy mind. I rejoice to know that great employers of labor are coming rapidly to this conclusion, and to have heard one of them say recently that so convinced was he of the folly of sustaining the hard yoke and the heavy burden, he had practically come to the eight-hour system, and had found it answer so advantageously, in the improved health of body and mind of the operatives, and in improved product of their labor, that he would vote for the universal application of the system just as earnestly as any one of the energetic men among themselves who are demanding it. But it is not the employer, it is not the employed, who can alone settle this question of good health and good life for good work. The public sentiment must lead to the change. A selfish want of common sense is the thing to be rectified, not by an attack on selfish persons, but on selfish deeds. What shall be done when a selfish woman, with

a really good heart, thinks it not unreasonable to quarrel with her draper because, at nine o'clock at night, she cannot get a yard or two of ribbon to fix herself out with for an evening party? Tell her she has a selfish want of common-sense; be ruder, if you like, and say she is deficient in wisdom; be ruder still, and say she is a fool—which at the bottom she may not be—and all these epithets will not improve her. Follow another plan, however. Put the matter forward plainly, without any mincing of the folly of the act as apart from the actor, and then, if the folly of the act can be loudly proclaimed—proclaimed from the housetops, as the ancients would say—there is hope in store.

It is the business of an association like the Sanitary Institute to make known these reforming ideas far and wide, through those whom it deputed to speak at its congresses; and if to-night I have ventured to speak very openly to my countrymen of all classes on the vital sanitary question that has been before us, believe me, I have had in view but one thought—the common health of the commonwealth, the best cultivation of the garden of the world.

The Water Supply of Boroughs, Villages, Towns and Small Cities.

BY JOSEPH F EDWARDS, A.M., M.D.

THERE is, probably, no sanitary question, throughout the entire breadth and length of this land to-day—we might even say in the world—more important than the problem of the water supply of small communities or aggregations of individuals living together in what we are accustomed to call boroughs or villages or towns or small cities. In our large cities we will always find a so-called “city supply” of water—sometimes good, sometimes fair, very often indifferent or bad; but, such as it is, a supply, the control of which has been removed from the individual and vested in the city government. Vital as is the problem of city water, we are not dealing therewith in this paper. It is our purpose to offer a few practical suggestions about the water that is used in those small communities dotted here and there, by the hundreds of thousands, over the surface of the globe. Until within the last few years these communities were content to get their water, each family from a well situated conveniently to the dwelling, and they were satisfied to ascribe the cases of diphtheria and typhoid fever that were nearly always present to “a visitation of Divine Providence.” But in the light of latter-day revelations, that blind faith in the purity of well water has given way to a growing scepticism. The suggestion has been started rolling, gathering strength as it rolls, that shallow holes in the ground contiguous to human habitations, to privies and to slaughter houses—holes that receive surface washings of all kinds (that is to say, “village wells”) are not fit places in which to collect water that is intended for human consumption.

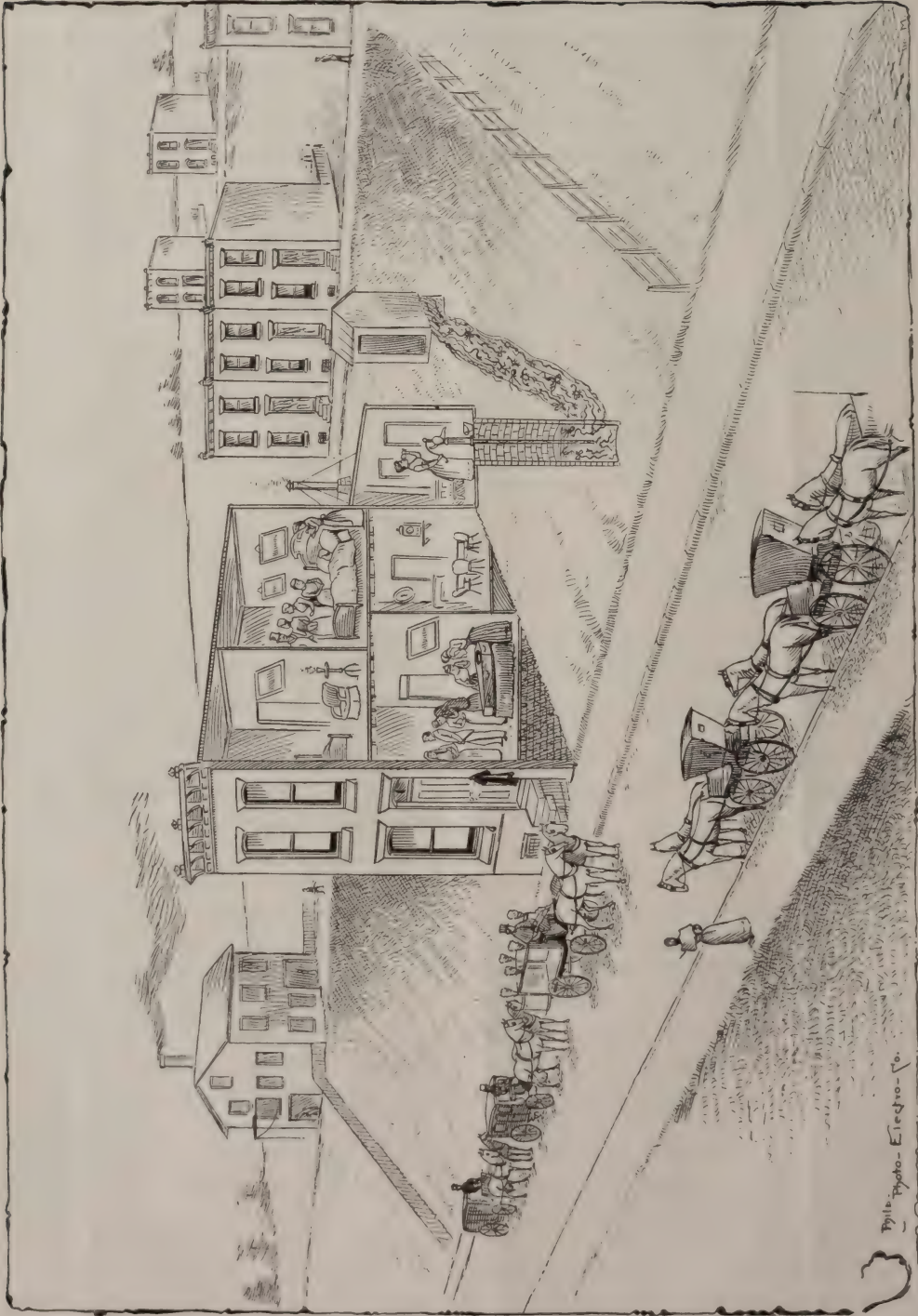
As this idea seizes hold of one village after another, we find the more intelligent and more progressive citizens of the locality organizing water companies, which are intended to offer to the citizens the means of securing a supply of pure and wholesome water. Of course, these companies are commercial enterprises, but in so far as they are intelligently and honestly conceived and brought forth, do they become sanitary blessings to their respective localities. This is an age of water companies, so to speak. It is the tendency of the day for villages to introduce a water supply, and it is a tendency in the right direction if due care be exercised that the water so furnished to the people is good and pure.

Now, human nature, as a rule, is very conservative. It clings to old tenets, doctrines, customs and habits, while changes are made slowly. The father, and the grandfather before him, have used the "family well," and the present generation clings to its use with a tenacity equalled only by that with which the slime and filth and disease cling to the walls of the well itself.

We think that it can be safely asserted, as a rule, that ordinary shallow, dug wells, such as are in such general use in the villages of the world, are not fit for use. Of course, there are exceptions to this, as to all rules, but the statement we have made may be accepted as an axiom. Whenever human beings congregate together in communities, the aggregate of organic waste incident to this community of life becomes very great, and it is practically impossible to absolutely exclude such waste from shallow wells, while, at the same time, water contaminated by this waste is obviously unfit for use.

Our attention has been recently called to the borough of Royersford, in this State, located on the Schuylkill River some thirty miles from Philadelphia, and as the conditions which we there found we know to exist in thousands of villages throughout this country to-day, we have felt that a description of what we found at Royersford would be applicable and interesting to very many of our readers.

This borough, of 2000 inhabitants, is located on a steep slope rising up from the banks of the river. Until recently, its water supply was derived from dug wells, and such diseases as diphtheria and typhoid fever were not uncommon visitors. The grades in this borough are so steep that it is very usual to note a house built on an incline as great as that depicted in our drawing, with the privy but a short distance away from and on a much higher level than the house, while the water well is under the kitchen. In this particular instance which we have illustrated, some four or five feet below the surface the soil is hard, rocky and impervious, so that it is absolutely impossible for the drainage from the privy to flow in any other direction than directly toward the well. Dr. Charles M. Cresson has analyzed some water from this well for us, and we here give his report :



The Journey of the Typhoid Bacillus.

Reaction alkaline ; condition clear, with sediment. Contains :

	Parts in 1,000,000 Parts.
Solid matter to dryness.....	_____
“ “ to redness.....	_____
Lime.....	_____
Magnesia.....	_____
Chlorine.....	52.433
Sulphuric acid.....	_____
Free ammonia.....	0.027
Albumenoid ammonia.....	0.083
Nitrogen as nitrites.....	_____
“ as nitrates.....	7.541

This water has been badly polluted by cesspool material or manure drainage, which, in its course from its source to the well, has been freely oxidized. The active organic matter has been reduced to a small and harmless amount ; but, unfortunately, the water carries the germs of intestinal disease, such as typhoid and dysentery, and is, for that reason, unfit for any household use or for drinking purposes.

CHARLES M. CRESSON, M.D.

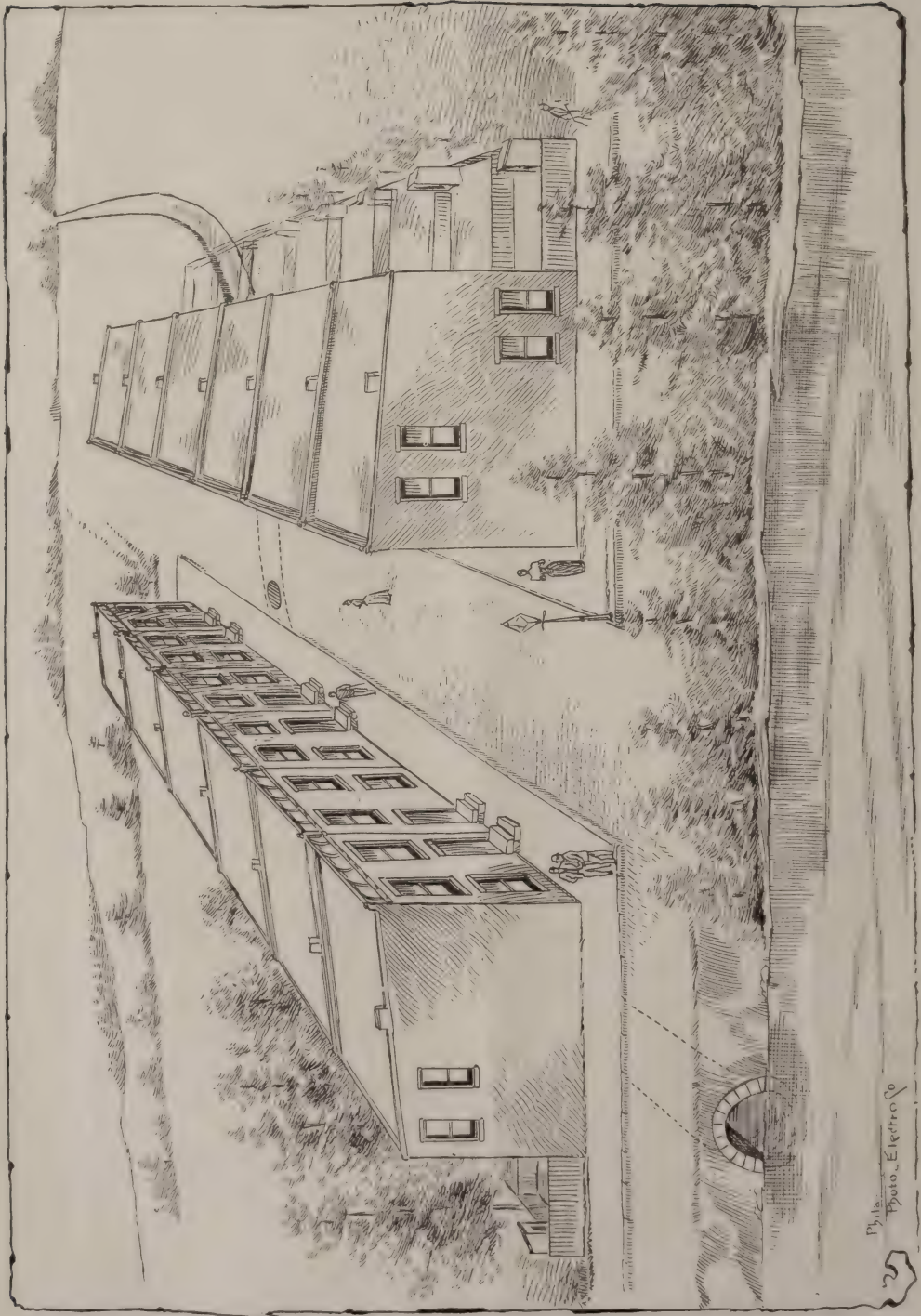
There has recently been a death in this house from typhoid fever, and as our drawing traces the poison from the privy, through the well and the sick chamber, until it lands its victim in the waiting hearse at the door ; is any further comment necessary ? We think not. One fact is worth a thousand theories, and what we have been relating is a *fact*.

We would strongly emphasize the fact that, until he reads it here, Dr. Cresson has had no knowledge of the origin of this water and knew nothing of the history of typhoid which we have recorded. He was simply handed a specimen of water, without any information in reference thereto, and requested to analyze it. His report tells us that this water contains the bacillus or seed of typhoid, and our report tells you that a person who drank this water died of this disease. Could the relation of cause and effect be more definitely or more scientifically demonstrated. How many hundreds of thousands of wells throughout the world are thus similarly polluted ?

At this point, let those of our readers who live in villages stop and reflect whether their own or some neighbor's well is not as liable to privy contamination as was the one which we have depicted.

Turn now to the upper part of this same illustration, and you will note three houses built in a block. Well now, in the middle of these houses five children were seized with diphtheria and four died. They all used *well water on the premises*. The neighbors, on one side came to the afflicted family's assistance and two cases of diphtheria, with one death, occurred. Those living in the third house *abandoned the well*, used the side door for ingress and egress (the front doors adjoined) and kept strictly away from the two infected families ; in the third house there was no sickness. These, again, are *facts* ; you can draw your own inference therefrom.

In the vicinity of the typhoid fever house lived Dr. Morey, and the ground sloped in a similar way. Dr. Morey had a well, and he noticed, one day, that his water was very brackish ; inquiry revealed the fact that a confectioner, on a



higher level, had emptied the salty contents of his ice cream freezers on the ground; here is another *fact*; what is your inference? So on another occasion the water of a well in this vicinity was quite blueish in color, while just at this time a quantity of refuse dye-water had been thrown on the ground not very far away; another *fact* for your consideration.

The following analysis is of the well of a very fortunate family, fortunate because they do not use the water therefrom, for, as this analysis demonstrates, the water therein is in a very bad condition.

Reaction alkaline; condition clear, with heavy sediment. Contains:

	Parts in 1,000,000 Parts.
Solid matter to dryness.....	—
“ “ to redness.....	—
Lime.....	—
Magnesia.....	—
Chlorine.....	106.284
Sulphuric acid.....	—
Free ammonia.....	0.192
Albumenoid ammonia.....	0.192
Nitrogen as nitrites.....	—
“ as nitrates.....	30.166

This water has been badly polluted, and is in an unwholesome condition. The indications are that the polluting material has been exposed freely to the air and that it comes from a cesspool. Search may discover its place of entrance and enable its exclusion; in which case the water will recover its wholesomeness. Is it not now fit for use.

CHARLES M. CRESSON, M.D.

For their own guidance we would say that this water is from the well of John Bisbing.

Look at the drain running down the main street of Royersford; in days gone by this drain was a rivulet; now, loosely walled up, it meanders down the principal thoroughfare and empties into the river. In its course it receives the refuse from many houses and the drainage from many privies. As you notice, it passes under a number of houses and in close proximity to a number of wells, serving as an avenue for the contamination of these latter. In nearly all of the houses under which this drain passes there has been more or less sickness; some more *facts* for you to ponder over.

ANOTHER TYPHOID WELL.

Here is Dr. Cresson's analysis of a well water selected at random.

Reaction neutral; condition clear, with slight sediment. Contains:

	Parts in 1,000,000 Parts.
Solid matter to dryness.....	—
“ “ to redness.....	—
Lime.....	—
Magnesia.....	—
Chlorine.....	80.775
Sulphuric acid.....	—
Free ammonia.....	0.055
Albumenoid ammonia.....	0.027
Nitrogen as nitrites.....	—
“ as nitrates.....	8.570

This water has been badly polluted, probably by material carried over the surface of the ground by a heavy rainfall. It carries a very small amount of active organic polluting matter, but contains great numbers of micrococci, ciliata and a bacillus resembling that of dysentery. The latter, as well as the large amount of oxidized organic matter, determines its absolute unfitness for household use or for drinking purposes.

CHARLES M. CRESSON, M.D.

Referring to our notes we find the following: "No. 4, Saylor's, is at the drug store; here the clerk was taken sick with typhoid fever and went to his brother's until he recovered; he does not drink the water since his return."

We have here given you a few *facts* for reflection upon. It seems to us that wells ought to be prohibited, and that every borough, village, town or small city should have its water supply carefully selected and carefully guarded; and if, upon careful examination, such water is pronounced pure and wholesome, then an ordinance should be found upon the statute-book compelling the citizens to use only this public water supply. This suggestion seems to us to have a universal application; let our readers reflect and decide whether they coincide with our views or not; at all events, the ordinary shallow well is a prolific source of disease and should be no longer tolerated.

Some Foul Ohio Wells.

BY T. T. CHURCH, M.D.,
Of Salem, Ohio.

NOT to describe the wells in regular order, the first case of typhoid fever occurred across the street from the well marked No. 2. This man had a hydrant, but for some reason did not like the water, but preferred that from the well across the street, and continued to use it until his neighbor requested him to quit. This first case died.

The elevation of the lot on which well No. 2 is situated is good, and the drainage is, on the surface, at least, away from the house and well. The well is just a few feet away from the kitchen door, and the surroundings seemed good and clean the day I got the sample. It is a dug well, and is about sixteen (16) feet deep. A case of fever developed here and the man died.

The water marked No. 4 came from the same square, but across the street and where the elevation is lower. The well is under the kitchen, but the owner assures me some fresh air can get at the water, and that no surface or sink drainage can reach it, as all the waste is carried away in a socket-tile drain, and that he has the well cleaned out every year. The well is about twenty-eight (28) feet deep, the upper fourteen feet being walled in, as they had to go through quicksand. The lower part is through a gravelly soil. One case of fever, with one death, occurred at this place.

The surroundings of well No. 1 were the least sanitary of the three. The house stands on high ground, and the well is a few feet from the back door, but in spite of the elevation the water was standing in pools in the yard the day I

got the sample, and the ground in the neighborhood is swampy. The well is not deep, the exact depth I did not learn, but I see no reason why it should not contain surface water after it has travelled through a few feet of soil. The record at this house is six (6) cases of fever, with, as yet, no deaths.

I have recently had a conversation with a gentleman, who for a number of years was our civil engineer, and he told me something which may throw some light on the source of the pollution of the well water. The neighborhood of wells Nos. 2 and 4 was once a swamp, and besides being filled with decaying vegetable matter was also a dumping place for dead animals and other animal matter. This swamp was underlaid with sand or gravel. As this part of the town was improved, the depositing of decaying matter here was prohibited, the water was drained off and the place filled in with good earth. As these wells are of the ordinary dug variety and not very deep, they may yet serve as a drainage for the remains of the swamp and its contents. It was some twenty years ago the swamp was drained.

[Dr. Church sent us first the samples of water for analysis, and subsequently the notes which we have published. Dr. Church was not aware of the results of the analyses, and Dr. Cresson knew nothing of the facts, until they see them here in print. Now follow the analyses; compare them with the facts, and some interesting points will be developed.—ED. A. OF H.]

Examination of sample of water from Salem, Ohio. Sample marked "No. 1." Sent by Dr. J. F. Edwards. Reaction alkaline; condition slightly opalescent. Contains:

	Parts in 1,000,000 Parts.
Solid matter to dryness.....	224.932
" " to redness.....	134.959
Lime.....	—
Magnesia.....	—
Chlorine.....	4.251
Sulphuric acid.....	—
Free ammonia.....	0.027
Albumenoid ammonia.....	0.055
Nitrogen as nitrites.....	—
" nitrates.....	0.994

This water gives no evidence of a prejudicial amount of organic matter, either active or oxidized. The microscope shows the presence of vegetable bacilli and vegetable matter, such as indicate the presence of surface wash. None of the bacilli that indicate intestinal disease were present.

CHARLES M. CRESSON, M.D.

Examination of sample of water from Salem, Ohio. Sample marked "No. 2." Sent by Dr. J. F. Edwards. Reaction alkaline; condition clear, with floating particles. Contains:

	Parts in 1,000,000 Parts.
Solid matter to dryness.....	539.836
" " redness.....	359.891
Lime.....	—
Magnesia.....	—
Chlorine.....	53.851
Sulphuric acid.....	—
Free ammonia.....	0.027
Albumenoid ammonia.....	0.027
Nitrogen as nitrites.....	—
" nitrates.....	5.142

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This water contains a prejudicial amount of organic matter, which has been oxidized. It is not safe for drinking purposes. The microscope shows the presence of zooglea and micrococci, and many particles of finely divided quartz. The indications are that the impurities have come over the surface of the ground rather than through it.

CHARLES M. CRESSON, M.D.

Examination of sample of water from Salem, Ohio. Sample marked "No. 3." Sent by Dr. J. F. Edwards. Reaction alkaline; condition clear. Contains:

	Parts in 1,000,000 Parts.
Solid matter to dryness	389.881
" " redness.....	279.915
Lime	—
Magnesia.....	—
Chlorine.....	2.834
Sulphuric acid.....	—
Free ammonia.....	0.027
Albumenoid ammonia.....	0.027
Nitrogen as nitrites.....	—
" as nitrates.....	0.685

This water contains but a small amount of active hurtful organic matter, but it has been undoubtedly contaminated by surface wash. It carries quite an amount of finely divided quartz, micrococci and bacilli from cladotrix, which equally indicate malarial tendencies. There is nothing to indicate positive unwholesomeness.

CHARLES M. CRESSON, M.D.

Examination of sample water from Salem, Ohio. Sample marked "No. 4." Sent by Dr. J. F. Edwards. Reaction acid; condition clear. Contains:

	Parts in 1,000,000 Parts.
Solid matter to dryness	529.839
" " to redness.....	369.888
Lime.....	—
Magnesia.....	—
Chlorine	58.102
Sulphuric acid.....	—
Free ammonia.....	0.301
Albumenoid ammonia.....	0.027
Nitrogen as nitrites.....	—
" as nitrates.....	10.969

This water is absolutely unfit for drinking purposes. It contains urine. The microscope shows the presence of membrane from the intestinal canal and great numbers of ciliata. The bacilli of intestinal disease were not detected.

CHARLES M. CRESSON, M.D.

Heavy Bedclothes Objectionable.

A good many people spoil the effect of a good night's rest by the ridiculously heavy bedclothes they use. Old-fashioned cotton quilts, or modern Marsala ones, are very heavy and of no use, as a thin covering to protect blankets from the dirt is all that is really necessary. Bedclothes should be like body clothing, light and warm. Many a bad sleeper would do well to see whether his coverings are not at the bottom of his restless nights.—*Hospital.*

The Pollution of Streams.

BY WM. B. ATKINSON, A.M., M.D.,

Professor of Sanitary Science and Diseases of Children, and Permanent Secretary of the American Medical Association.

THE average man seems to think that the air and water are equally free for him to pollute at his own sweet will or as it may suit his convenience. Not content with forcing on his neighbors the filthy smell of his tobacco in every public place, when he calls at your residence, or office which is devoted to the reception of ladies and gentlemen, he must pollute the air of the entire premises by persistently puffing the vile odor during the entire business transaction, leaving behind him an unpleasant memory, which long remains to inform everyone that a selfish being has obtruded his presence, and left his mark to annoy all who may be compelled to visit that place. The tobacco evil has become such a constant annoyance everywhere that we involuntarily feel like crying out against it on every occasion.

But while the odor of tobacco is filthy, annoying, sickening to many, and I am sure has often caused severe and apparently unaccountable illness to many young children, it does not at all equal, in far-reaching danger, the matter which we desire to bring to the notice of the readers of the ANNALS. I allude to the pollution of water courses, running streams, creeks which water many a pasture field, and which wind through many a forest glade, until, miles away from the source of pollution, innocent families are broken up by the loss of parents, or one or more children are snatched away, while confidently using the water which for years has been regarded as the purest that could be desired. Nor is this all. The cows are permitted to drink at the little stream which, running through their pasture, has never been the object of suspicion. Their milk is used by the family or sold to distant patrons, and the deadly typhoid is carried to the distant city, there to decimate the population or enfeeble those who survive. The time has come when ignorance cannot be used as an excuse. The strong arm of the law must be invoked, and the intentional or even careless pollution of the water must be heavily punished.

A few illustrations will show the frequency and terrible danger of this conduct. A builder erected six houses in a country place, and carefully enclosed a small spring with a sewer, into which all the sewage of these houses was turned. Soon the people living below, whose houses were on the line of the little spring, were annoyed by a constant odor of fecal matter which they soon traced to the water-way, and an examination showed the presence of quantities of cesspool filth being carried along with the stream. The full importance of this matter was shown when a survey of the stream, as it meandered through the fields and woodlands, disclosed the fact that it emptied into a much larger stream, used by several dairy farms as the sole source of their water supply for man and beast. A double wrong was done in each case. The families of these farms were thus constantly in danger of disease, and were also innocently liable to send the same to every family to which they sold the milk. Upon investi-

gating the houses for which this sewer had been made, I found that a case of mild typhoid fever had just occurred in one of them.

Thus, the germs of typhoid fever were being widely disseminated, and at any moment an explosion of that disease might have occurred, not only along the line of the stream, but in the neighboring city, among those who were served with the milk from each of these dairies.

Again, a farmer, or other person, living on a stream, loses a hog by cholera, a horse by glanders, a number of hens from any of the diseases which prevail among fowls, and the carcass is at once thrown into the convenient stream, with the expectation that it will soon be carried away. A second illustration will evince the result of this kind of pollution. A beautiful valley for several weeks was the seat of an epidemic of diphtheria, and many children died of this loathsome disease. An examination proved that the disease had broken out soon after the body of a hog which had died of cholera had been thrown into the adjacent water, and, after being carried a short distance, was washed up on the banks in a putrid condition, where it laid for a time, until the family concluded that the terrible sore throat and sickness which afflicted them was the result of the foul air they were compelled to breathe. The putrid corpse was again sent on its way to afflict other homes. In this instance it would appear as though every means had been employed to insure a foul stream to give forth its death-dealing germs to the houses which lined its banks. The cesspools of the houses and factories were so placed as to allow their contents to flow into the stream, thus providing the best form of culture bed for disease germs. I may mention here that the people of the village adjacent seemed, from some cause, to have innocently aided, in a variety of ways, in spreading the epidemic. A school in the neighborhood first attacked was closed, as a precaution against the carrying of the contagion, when immediately many of these children went to a school at a distance, and thus acted to do the very thing supposed to be provided against.

Although foreign to the subject of this paper, I may mention that the return of convalescents too early to their work in the mills, to school, to church, and, above all, the foolish public funerals almost invariably held in the case of those who died, where the Sabbath school children were assembled in the church, and permitted to view, and even kiss, the corpse, materially helped to increase the epidemic, and thus it was spread to villages entirely free from any other tendency to the disease.

The accompanying diagram will more forcibly show the origin of the epidemic, the dead hog having been thrown into the stream just above the house first affected. It was carried down and stranded on the low bank at a point seen in the picture where the house is exposed on three sides to the emanations from the stream. Thence it again was carried down the creek, all the time becoming more putrid and constantly showing its power for evil by a fresh outbreak of diphtheria at each point. Where the carcass finally disappeared is not known. The illustration also depicts the spread of the disease not only along the banks of the stream, but by contagion from sick children at the



school to which many went when their own school was closed, from contact with convalescents at the mills, at the churches, Sunday schools and through the aid of public funerals. One village at quite a distance from the original point of outbreak, always regarded as exceptionally healthy, suffered wholly by importation of the disease.

The limits of this paper will not allow of further examples, but these are sufficient to demonstrate the danger of this method of water pollution and the great need of a speedy effort to correct it.

While there is no law directly forbidding it, yet our State Board of Health has the power to stop it and punish those who persist in it. We need, however, more thorough awakening of the people in the matter. First, to their own right to the maintenance of the purity of their local water supplies, that their stock may drink in safety of the stream flowing through their pasture grounds. Next, to care on their own parts that they are not equally guilty in this method of pollution. Here I may digress to illustrate how some are guilty. A party camp out, near a stream, of course. When ready to break camp, in many instances all the refuse food, even the straw bedding, more or less foul, are dumped into the water as the easiest way of disposing of it. Or a dealer finds a lot of food on his hands, either perishable by reason of the hot weather, or because it is already partly decayed; he dumps it into a stream, where it is eaten by the fish, who speedily die from its effects, and thus the dead fish and the putrid food add to the pollution of the water. Every one should regard himself a sanitary officer so far as to prevent as much as he can the doing of anything inimical to health. Were the careless or the intentional evil-doer aware that he was under the observance of a body of people who were determined to prevent his injuring their health, whether through carelessness or wickedness, he would at least be more circumspect in his actions. Let me illustrate. In a large city, while there are numbers of policemen, yet they can not be everywhere. Now, if each citizen made it a duty to see as he went along that the petty wrong-doings were at once frowned on, there would be vastly less of such things. How many of us care to interfere to stop a fight between boys in the street! Or to stop boys from killing the birds by the use of the slingshots or catapults found in the hands of the boys and on sale in the stores. In short, we go on, perhaps saying, "it is bad, but the police must see to it." Now, if these young rascals knew that every passerby was a policeman, ready to frown on their conduct, the evil doing would be greatly lessened. So in the country places. The people must aid the sanitary authorities, and while seeing that they do no wrong themselves, see also that the evil doer is kept within bounds.

Don't Lose Your Temper.

On a recent occasion George Bancroft, the historian, told a bevy of young girls that the secret of long life lay in never losing one's temper. If you will never get angry, he said, you will live to be 90.

A Knowledge of Hygiene the Duty of Wives, Mothers and Housekeepers.

BY MRS. CARY EBNER,
Of Wadsworth, Ohio.

ALTHOUGH a woman I am deeply interested in hygiene, and am an ardent admirer of the ANNALS OF HYGIENE, which is a welcome visitor at our home. I earnestly believe that it is the duty of every wife, mother and housekeeper to fully understand the laws of hygiene. It is with regret that I am aware of the ignorance that prevails among this class. The communication upon the life of Mayor Fitler was received by us with interest. True, great wealth places within their reach such conveniences as the poor man cannot attain, yet there are many instances wherein the poor man displays more intelligence respecting the laws of hygiene than do many of the wealthy. Money does not breed *common sense*, and while there are many odds against both, they almost have equal chances for intelligence. God's own pure air and a clear sky is for all. The health-giving sunlight, which so many of the rich shut out of their homes by beautiful and costly drapery, finds its way freely into the poor man's home. We find there no richly tinted carpets to fade, in place of which are the bare floors which receive daily cleanings from the good housewife. I have visited some homes of the poor that I thought were the sweetest and purest places upon God's footstool; where the very air seemed a blessing; while again, I have entered the homes of the rich which were draped and redraped so much that the atmosphere almost seemed stifling, and I was glad to escape and once more to breathe the pure air, and feel the friendly warmth of the sun. Oh! I thought, this is wealth! but where, oh where, is intelligence? Carpets, fashion, before health, but what is wealth without health? I have reached the conclusion that the world does not need more money, but more information upon the laws of health. The old adage can be used right here, "health makes wealth." I would that the laws of health be taught the young until it becomes their second nature. I would that the parents more fully understood these laws; that these little ones be allowed to retain the perfection that God has given them. But alas, there are so many ignorant and careless parents that the case seems almost hopeless. May the day come quickly when people will become better educated upon a subject which seems to me one of the most essential of all other branches of study. And I would that the ANNALS OF HYGIENE could reach more readers, that its blessed instruction in the way of health, which means wealth untold in a sound body which makes sound minds, and thus adds to the welfare of our people, should be universally enjoyed.

Thus Far Let Us All Be Anglomaniacs.

A law has recently been passed in England giving to the health authorities power to tear down any building which may be deemed injurious to public health, and also to regulate the number of inmates of any house.

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EDITORIAL.

The Milk Supply of Philadelphia.

WE happen to have quite an intimate acquaintance with the milk supply of this city, hence we write of it, believing that since human nature is pretty much alike the world over, that which we know as facts about Philadelphia milk will apply equally forcibly to the milk of any and every large city and of small cities as well.

Let us follow a quantity of milk in its journey from the farm in Montgomery County to the stomach of the consumer in Philadelphia. Of a Sunday afternoon the farmer milks his cows and the milk is put in the springhouse to cool. Monday morning by 5 o'clock the cows are again milked, and the warm milk, fresh from the cow, is mixed with that which has cooled over night, and the product is jolted over country roads for from one to three miles to the station, where it is loaded on the "milk train," reaching the city a little after 8 o'clock.

Let us pause a moment to note that already a most important rule has been violated. By the addition of the warm morning milk to that which has cooled over night, the whole mass is elevated to that degree of tepidity which, by the agency of the agitation or churning which it receives in its subsequent transportation, places it in the most favorable condition for the development of that poison to which Professor Vaughan has given the name of tyrotoxon. It is now a well-established fact that milk should not be agitated, as by transportation, until it has lost all of its animal heat, but this rule, we believe through ignorance, is utterly disregarded, as we have shown, by the milk farmers of this section.

It is the general custom in this vicinity for the farmer to send his milk to the city in large cans, selling it at wholesale to the dealer, who retails it throughout the city. Let us suppose that on a particular farm the yield of milk is about 120 quarts per day; the farmer will use four thirty-quart cans to send it to town. Now, let us suppose, that on a certain day the yield of milk is only 110 quarts (for the amount given varies considerably from day to day); one of the four cans will lack ten quarts of being full. Now, the farmer must pay the railroad half a cent freight on each quart of milk, and as it would be obviously impossible for the station agent to measure each of the 2000 or more of quarts that are daily brought to each station, the rate is regulated by the size of the can, a thirty-quart can paying fifteen cents for its transportation. The farmer is a frugal man, and as he does not want to pay five cents for trans-

porting ten gallons of country air to the city in his can that lacks ten quarts of being full of milk, he quietly and in the early dawn slips ten quarts of more or less pure water into the can. So that, as delivered at the station, the 120 quarts of milk from this particular farm consists of 110 quarts of milk and ten quarts, or *nearly 10 per cent. of artificial water*; that is to say, of water that was not intended by nature to be there.

Having now deposited our milk and water at the station, let us follow it in its journey. At a little after 8 o'clock the "milk train" reaches the city, and the wagons of the dealers are congregated, awaiting its arrival. Do not deceive yourself, reader, that the milk which is delivered at your door early in the morning is fresh from the country. The milk which we have been following, some of which left the cow Sunday afternoon, is delivered to the consumer Tuesday morning; that is to say, arriving in the city a little after 8 o'clock one morning, it is not delivered to the consumer until the following morning. This is the rule, to which, of course, there are some exceptions.

Now, we all know that there is no article of food so delicate and perishable as milk. Even with the most scrupulous care and cleanliness of cans it will not keep long, while in warm weather it will sour very rapidly. But here the chemist has come to the relief of the milk dealer, and a great traffic has sprung up in artificial preservatives, composed of borax, boric acid and the like. Much of the milk coming to the city is, therefore, *doctored* with these preservatives. Now, then, let us suppose that a dealer has a "route," wherein he sells 300 quarts of milk daily; and suppose his farmers have sent him to-day only 280 quarts; how can he serve 300 out of 280? Aquatic calculation alone can solve this difficult problem, and Schuylkill water comes to the rescue of the dealer. As we have shown, this milk most likely contains 10 per cent. of added water before it leaves the country, and now we find the dealer adding about 6 per cent. more, so that about one-sixth of each quart of milk is water that has come there by the art of man. So far, we have seen only a fraud upon the pocket save in the mixing of the fresh with the cooled milk. But now we come to a phase of the question that assumes a most serious aspect. Let us suppose that the dealer who has customers for 300 quarts receives from his farmers to-day 325 quarts; add to this twenty quarts of water, and he has a surplus of forty-five quarts. Does he throw this away, or give it to the pigs, or sell it to some neighbor? The latter, yes, if he has a chance; the former, emphatically, no. These forty-five surplus quarts are treated with the preservatives, to which we have already referred, and laid by for use to-morrow. And so on, day after day, this surplus accumulates, until we verily believe that a portion of the milk of this city is probably a week, may be ten days, or, possibly, two weeks, old before it is consumed.

Is it any wonder, then, that cholera infantum carries off such an enormous number of bottle-fed infants? But maybe you complain that your milk looks so poor, and you change to a milkman who promises you rich Alderney milk. You are charmed with the change: your milk is so rich and creamy; it is quite golden in color; but at the same time, baby's bowels are loose, and it even

happens occasionally that if you drink a glass of this milk yourself, particularly if, before breakfast, on an empty stomach, your bowels are most freely moved and you have more or less griping. Do you know that dandelion added to poor milk will give it a rich, creamy Alderney color, and do you know that taraxacum is made from dandelion, and do you know that when your physician wishes to act on your liver and bowels it is not uncommon for him to prescribe taraxacum? Do you realize that while an occasional glass of milk containing this drug will prove most wholesome for the adult, its continuous use by the infant will prove most disastrous? Do you know that certain drug firms advertise for sale, and do a large trade in drugs, that will convert "*plain milk into Alderney?*" and do you think that such drugged milk should be given to your infant?

We do not want to be understood as making the assertion that *all* of the milk consumed in this city is like that which we have described, because there are some milkmen who will furnish honest milk, but we unhesitatingly assert that the great bulk of the 275,000 quarts daily consumed in this city is the kind of milk that we have briefly described.

The Hygienic Aspect of Rapid Transit.

While the press and the people are discussing the various phases of the commercial aspect of the "rapid transit" question now agitating this city, we must not neglect the hygienic element that is closely allied to this subject.

In the first place we must assume that "rapid transit" is one of the really pressing hygienic needs of this, as it is of all, large and extended cities. The vexations, annoyances, loss of temper, chilled bodies, chafing and general ill-comfort inevitably attendant upon and inseparable from the old-fashioned horse-car system of transportation (good enough for small cities) are not calculated to produce that serenity of mind and equable temperature of body so essential to good health.

We feel that it can be stated as a hygienic *fact* that "rapid transit" is desirable, leaving open for discussion only the best method of securing it.

From the commercial point of view alone, we incline to the belief that underground roads are to be preferred. With them our rapid transit would be the most rapid, while the minimum of interference with the general surface traffic of the city would be experienced. But when we come to consider the question of health, the elevated presents many advantages over the underground railroad. The prime question of ventilation offers a strong argument against the underground road. We are aware of the fact that scientific engineers will tell us that tunnels can be ventilated, but we also know that "*out-doors,*" "*in the open air*" requires no ventilation. With the elevated we will be continually surrounded by that atmosphere which, in the tunnel, it will be necessary to employ artificial agents to bring to us.

The sudden transition from light to darkness, and from darkness to light, that must inevitably accompany tunnel traveling, will certainly do the eyes no

STREET CAR.



Thos. Photo. Engraving Co.

ELEVATED CAR.



De Mear.

The occupants of which car, do you think, will reach home in the most placid frame of mind, will have the best digestion and sleep, and the least liability to Pneumonia, Rheumatism, Pleurisy and Profanity?

good, and it is but reasonable to infer that it may prove very injurious to these sensitive and all-important organs. The constant vibratory roar confined within a narrow space, and thereby intensified, will produce such vigorous waves of sound that the delicate organ of hearing may, likely, suffer more or less therefrom.

The best system of ventilation will not remove from the tunnel all of the smoke and cinders from the engine, so that the atmosphere inspired by the passengers will be most irritating and unfavorable to the health of the lungs.

Finally, the monotony of underground travel, with no variety of scene to entertain, will prove most "wearing on the nerves," while the only means of "whiling away time" that will be afforded—the reading of newspapers in a dimly-lighted car—will be a second injurious agency for the eyes. The sanitary arguments that we have adduced against underground are, in reality, arguments in favor of the elevated system. Upon the whole, we are inclined to think that from a sanitary point of view (and the day is rapidly approaching when this view will be considered the most important one), rapid transit is a necessity, and that elevated are to be preferred to underground roads.

Our Programme for the Coming Year.

It shall be our aim during the year 1891 to make this journal even more practical than it has been in the past. There are an almost infinite variety of topics that possess a great practical interest for every family and for every individual; these topics will be discussed in a short, concise and practical manner by authors of eminence from all over the country—we might say the world. We have always been anxious to make this journal a sort of "family guide," a reference book to which one can go for information on all matters pertaining to health. With this idea in view, we again extend to our subscribers the invitation that we have already issued several times before, to write to us for information on any and all subjects of a hygienic nature on which they wish enlightenment; such queries will always receive attentive consideration and prompt reply.

We would ask our friends to look over the index for 1890, published in our December issue, and then tell us whether they have ever seen a book that contained more really practical, valuable information for intelligent persons than was contained in our volume just closed. The coming volume will excel the past. In conclusion, we wish all of our friends not only a worldly prosperous, but a healthy, and, if so, necessarily, a happy new year.

Clear Water.

A POPULAR impression erroneously prevails that "*clear* water" means "*pure* water." Of course, the sanitarian knows that such is not the case, but the average individual will hold a glass of water to the light, and if it is clear, then he usually concludes that it is pure. In this very issue of our journal we publish the analyses of seven samples of more or less foul water, and by reference thereto, you will note that, with one single exception, they are all *clear* waters, and this exception is only *slightly* opalescent. Therefore, do not in the future lay too much importance upon the mere unsupported fact that a particular water is clear.

NOTES AND COMMENTS.

A Temperance Proverb.

A German proverb says : Intemperance drives reason out of the head, money from the pocket, the elbows through the sleeves and health from the body.

The Doctor Who was Never in.

"A great many people owe their lives to that doctor," said Kicklington. "Is he an able physician?" "It isn't exactly that I referred to. He is never in his office when you want him."—*Washington Post*.

Another Libel on "Divine Providence."

The Chicago *Tribune* tells of a Missourian who died from having gorged himself with veal and hard cider. He was a member of several societies, all of which passed resolutions imputing his removal to Divine Providence.

Youthful Physiology, with the Seeds of Truth Therein.

The study of physiology and hygiene is making itself felt in the land. In his composition one boy writes : "Girls kill the breath with corsets that squeezes the diagram. Girls can't run or holler like boys because their diagram is squeezed too much."

Oxide of Lead in a Loaf of Bread.

The oxide of lead found in the bread of a Chicago baker has been traced to the stencilling of the name of the miller on the bag containing the flour from which the bread was made, the color having been put on so heavily that it soaked through the cloth.

Skull Caps for Funerals.

The wearing of skull caps at funerals is a fashion now in vogue in some localities that has much to commend it. The caps are put on in the carriage, where the ordinary hats are left, and they are worn all the time at the grave. Such a fashion will prevent many colds, as well as more serious ailments.

A Precaution Against Danger from Electric Wires.

Dr. Leonard J. Gordon, President of the Jersey City Board of Health, has made a suggestion that all telegraph poles on which live electric wires are strung be painted red, that the public may be able to distinguish them. Dr. Gordon will bring the subject up for discussion at the next meeting of the board.

How Many Fools Call Wise Men Fools?

"A wealthy gentleman," says Charles F. Wingate, "who had suffered much from impure atmosphere of his house, said, after it had been scientifically ventilated : 'If anybody had told me that my health and comfort and that of my family would have been so increased by such a change, I should have said he was a fool.'"

Cinders in the Eye.

An old locomotive engineer claims that if a cinder gets into the eye its removal can be effected by persistently rubbing the *other eye*. We confess that we cannot comprehend the philosophy of this procedure, but as it can do no harm and since it is recommended by one whose occupation would lead us to believe that he is familiar with the habits and customs of cinders, we see no reason why it may not be tried on the next appropriate occasion.

Chapped Hands.

A very simple, and at the same time, very efficient preventive of chapped hands will be found in thoroughly drying the hands after washing them. Many persons, especially children, will hurriedly dry the hands, leaving considerable moisture between the fingers, and such conditions are most favorable for the production of "chapped hands." Dry each finger separately and thoroughly, and you will be gratified with the results.

Patent Medicines and Inebriety.

The *British Medical Journal* reports a meeting of the Society for the Study of Inebriety, at which meeting it was decided that as much inebriety is caused by use of alcohol and opium under the insidious form of patent medicines and so-called "cures," there should be a State law requiring that every proprietary medical preparation sold should have its exact composition printed on the cover. Such a law would be a great boon to our credulous American families.

The Results of a Pilgrimage to Mecca.

In one of our issues, last Summer, we figured "Mecca" as the "Home of Cholera." Now we learn, that while 43,000 pilgrims to Mecca arrived at the Red Sea ports, all provided with return tickets, but 28,000 will avail themselves of them. The other 15,000 have died of cholera. Of pilgrims coming by land no account can be kept; but one caravan of 2,500 is said to have been reduced to 900 when it reached Mecca.

A Warbling Girl.

A lady writing to the *British Medical Journal* says that she recently heard a young girl of 14 years "whistle," as her people called it, but "warble" it really was, for she kept her mouth slightly open, and the lips merely trembled, the notes being formed in the throat, the centre of it working as a bird's does when singing, and the sounds produced were exactly like those of blackbirds and thrushes. She warbled several airs to pianoforte accompaniments faultlessly and most beautifully modulated; and so powerful were the notes that her grandmother, who was excessively deaf, could catch every one, without the slightest effort, in another room a little distance off; in the same room some notes were deafening, when she poured them out at the *forte* parts. She had been self-taught entirely from "whistling" to her dog and sitting in the window to "warble" to the birds.

Restoring Nature's Equilibrium.

It was the great Napoleon who first formulated the wisdom of this injunction, by advising that if you gormandize one day fast the next ; if you sit up a whole night stay in bed the next day, if you can ; if you dissipate in any manner let as many hours of rest and quiet follow as you gave to the dissipation. Of course, it is wrong for one to overtax nature, but if it is done, then such advice as that above is most wise.

The Death Rate from Consumption in England.

There is an instructive lesson in the English mortality returns from consumption for the last forty years. In the ten years from 1851 to 1860 the number of deaths from consumption in persons from 15 to 45 years of age amounted to 3943 in every million ; from 1861 to 1870 it had fallen to 3711 ; from 1871 to 1880 it was 3194, and from 1881 to 1887 it did not exceed 2666. The decreased rate is more marked in the female than in the male sex.

Cheerfulness in Adversity.

Ill health, according to the always cheerful Sir John Lubbock, is no excuse for moroseness. If we have one disease, we may at least congratulate ourselves that we are escaping all the rest. Sydney Smith, ever ready to look on the bright side of things, once, when borne down by suffering, wrote to a friend that he had gout, asthma, and seven other maladies, but was "otherwise very well," and many of the greatest invalids have borne their sufferings with cheerfulness and good spirits.

Von Moltke at 90.

Von Moltke, at 90, rises at 5 o'clock, makes his own cup of coffee over a spirit-lamp and busies himself with garden and farm till 10, when he takes a bowl of soup, or a biscuit, with a glass of wine, for his second breakfast, after which he attends to his correspondence and other business till 1. From 1 to 2 he lies down. At 2 he dines sparingly and works again till friends drop in, with whom he talks or walks until his 8 o'clock tea, and at 10 he is in bed. He attributes his clear head and good health to his regular and abstemious habits.

The Science of Eating.

It has been very truly said that no dyspeptic ever recovered vigorous health who undertook to live after a strictly regulated diet, and that no healthy person who lived according to a strictly dietetic system ever failed to become a dyspeptic. So much for "rule," that bugbear, feared of all persons. There is no philosophy in the life that is regulated by rule. The true science of eating consists in eating everything save that which individual experience has proven to be deleterious, and to so live our lives that our stomachs will be able to digest all that is entrusted to them. The self-concentration that always accompanies "eating by rule" is not friendly to health.

The Use of Buttermilk in Vomiting.

Dr. Stanley M. Ward writes in the *Therapeutic Gazette* that he has found fresh buttermilk very serviceable in relieving vomiting of various forms. The remedy is administered ice cold, in doses of about half a teaspoonful repeated every fifteen or twenty minutes. In the case of children with cholera infantum he has often succeeded in quieting the stomach by interdicting everything else and using a few drops of fresh ice-cold buttermilk at intervals varying in length according to the severity of the case.

Double Up the Underclothing.

We would repeat a suggestion that we made last winter, as a reminder to those who were then subscribers, and as a fresh suggestion to our new friends. If, some morning, upon rising, you find the thermometer several degrees below that which it had been the day before, put on two pairs of drawers, two undershirts and two pairs of stockings. If you will try this little dodge you will be gratified at the comfortable feeling of warmth you will experience, while your red-nosed acquaintances are shivering and shaking like the proverbial bowl of jelly.

A Nursery for Mothers.

Two ladies in Washington have opened a nursery for the instruction of mothers. Lectures are given, nursery improvements are exhibited, food cooked, and last, but not least, a baby is washed, dressed, fed and put to sleep by expert hands in the presence of the audience. In New York, near Tompkins Square, directly in the midst of an immense baby population, a German and his wife recently started a bathing-house for babies, and during the past summer have done a rushing business. The charge of the bath is ten cents, which includes the dressing and undressing of the child and a thorough wash.

Dyspepsia Hall.

Four hundred and sixty-seven girls lunched in a New York cafe the other day, and by the courtesy of the head waiter the writer was permitted to play sentinel at the kitchen door. Only thirteen orders contained meat—two of steak, three lamb chops, five ham and three mutton stew. Twenty-seven bowls of soup, chowder and broth were served; six damsels called for fish, one hundred and forty had oyster stew and sixty-seven took lobster or chicken salad. An even two hundred made a meal on ice cream and cake, with a glass of ice water. Forty-five had hot apple dumpling; three hundred cuts of pie were consumed, with one hundred and two charlotte russe, seventy chocolate eclairs, thirty-nine cream puffs and one square yard of Washington pie, cut into sections of three inches each. One hundred and seventeen drank tea, twenty called for coffee; twenty-three for pop, ale and beer; two had claret, seventeen soda water and the rest, one hundred and sixty-seven in all, filled themselves with ice water. It is to this kind of diet that so many of our sallow-faced, bloodless, fleshless, shapeless women and children can be traced.

Lights in Children's Bed-Rooms.

If your child asks for a light in the bed-room and if you notice that the little brain conjures uncanny sights and thoughts from the shadows of a semi-darkness, let the light burn brightly. It is a mistake to force a child to become accustomed to the darkness, if the nervous system is so organized that this forcing process is productive of frights. We must never forget that the nervous system of a child is a very susceptible organization, and that deleterious impressions made thereon will, oftentimes, make their influence felt throughout the whole afterlife. If, therefore, your child asks for a light, do not refuse the trifling request.

Penitentiaries as Sanatariums.

There is a deal of wisdom in the remark made by William Muldoon, the professional wrestler, that "if he were asked to recommend the best training for a young man about town whose naturally good constitution had been impaired by high living, late hours and the pursuits habitual to gilded youth, he would say six months in the penitentiary." Whatever may be said of prisons as moral reformatories, there can be no question that the regular life and simple and restricted diet therein enforced would do much to restore the physical vigor that the irregularities of fashionable life had enfeebled. We fear that the "penitentiary cure" will never become popular, but the suggestion of the efficacy of prison life may have a salutary effect.

The Causes of Dyspepsia.

One of the most frequent causes of dyspepsia (says Dr. Wm. Pepper), is the constant use of irritating substances, such as tobacco, alcohol and highly-seasoned food. Tobacco and strong tea and coffee act both by depressing the nerve force of the stomach and, if swallowed, by directly interfering with the digestive processes. It will not be disputed by any fair-minded person that tobacco, tea and coffee are injurious when taken in excess. It must be admitted that the majority of men, in a state of health, can use a certain amount of tobacco without injury. This amount varies with the individual, but is in any case small. I cannot speak too strongly against the filthy and disgusting habit of chewing tobacco.

The Thermometer as a Clothing Indicator.

We recall the story that was related of a certain eminent clergyman, a man who attained not only great fame but great age as well, to the effect that he had always hanging outside of his window a thermometer, while in his bureau drawer were a great variety of stockings of different degrees of thickness. According as the thermometer (which he consulted upon rising) indicated the temperature, so would this clear-headed man select the stockings for use on that day. The principle guiding this good man was one of the most important principles of good health—namely *warm feet*. This man, whose work was mainly with his brain, had learned the lesson that cold feet and a clear brain are not very congenial companions.

Self-Accusation.

A moment's reflection will convince anyone that self-accusation, while productive of no good, will surely produce that condition of mental depression which will favor ill-health. It is true that we have no more right to accuse ourselves than have we to accuse others. If we do wrong, let us resolve not to fail in this particular again, but having so resolved, let the matter rest here. Do not let us impose upon ourselves the depressing burden of self-accusation. Let us ever remember that there is no ground for accusation when a person has made an involuntary mistake, or when his good intentions have apparently failed.

Koch's Cure from a Financial Standpoint.

If we can believe newspaper reports, those who are close enough to Dr. Koch to be favored with the secret of his cure are reaping a rich harvest therefrom. The Berlin correspondent of the *Press* (November 23d) is responsible for the assertion that Dr. Levy, one of Koch's assistants, was then treating some two hundred patients daily, each of whom he was charging \$25. A little calculation will show us that Dr. Levy is thus making the snug little sum of \$5000 per day. So that, even if the wild hopes of consumptives are not realized, the close friends of Koch will have no reason to find fault with the newspapers for their generosity in freely advertising this alleged cure.

In Childhood's Happy Hour.

The following is said to be a literal copy of the rules posted on a country schoolhouse door in this State: "Each pupil is required to make a bow on entering the schoolhouse of morning, also on leaving the schoolroom of evening. There shall be no profane language used in school, nor on the playground, nor shall there be no pin sticking, pinching, nor no tagging, nor no uneasy whispering in school. No pupil shall leave the schoolhouse without permission of the teacher. No uneasy moving from seats. No loitering on the road from nor to school nor no nicknaming. Every pupil over 8 years shall be subject to these rules, and the teacher is to make allowance for all pupils under 9 and enforce the rules accordingly. If any pupil breaks these rules he shall be punished by switching."

"In Darkest England."

General Booth, of the Salvation Army, in his book with the above title, vividly portrays the "slums" of London. Every large city has its "slums," and we have always fancied that such localities were just the places wherein disease germs would thrive and breed and multiply, to wander therefrom and invade and slay the residents of the more aristocratic sections. Therefore do we warmly feel that philanthropy and sanitary legislation should, hand in hand, labor to eradicate the "slums" of our cities. It would be a great undertaking, but it would be a feasible and perfectly practicable one. In one of our early issues next year we will publish an article that will outline a plan for this regeneration that we are sure will be accepted as eminently practicable.

Tests for Glib Tongues.

Here are some sentences which rival the celebrated "Peter Piper's Peck of Pickled Peppers" in testing the agility of the tongue:

Gaze on the gay gray brigade.

The sea ceaseth, and it sufficeth us.

Say, should such a shapely sash shabby stitches show?

Strange strategic statistics.

Give Grimes Jim's gilt gig-whip.

Sarah in a shawl shoveled soft snow softly.

She sells sea shells.

Smith's spirit flask split Philip's sixth sister's fifth squirrel's skull.

An Astor, and yet Another Astor, and Still a Gould.

The newspapers tell us that the late John Jacob Astor, of New York, was so rich that he could never find time for recreation; his real estate investments kept him constantly employed. *Now, he is dead!* His brother William, satisfied with \$10,000,000, so invested his money that, while it brought him much less income, yet allowed him the time for recreation and pleasure. *He is still alive*, and enjoying himself. So also, are we told that Jay Gould, who has once before nearly wrecked himself, physically, in Wall Street, has, after having restored his health, through an alliance with the Goddess Hygeia, determined to return to active business, with the determination to become the richest man in the world. This may be newspaper talk, and we hope it is; but if it be true, we would warn Mr. Gould that there is more pleasure in store for a *live* man with \$100,000,000 than for a *dead* man with \$400,000,000.

The Improving Standard of Humanity.

It was an instructive and encouraging sight, for the student of sociology, that we witnessed the other evening on Chestnut Street, in this city. At one of our theatres a sensational, blood-and-thunder drama was being enacted; a line of boys and young men extended for, maybe, fifty feet down the street, waiting the opening of the doors. Farther down, at another theatre, Booth and Barrett were the attractions; legitimate, elevating, instructive drama was the magnet; here, a line of the same class of men and boys, extending for more than a block away from the theatre, were waiting admission. It was not the mandate of fashion that attracted the greater crowd to Booth and Barrett, for it was not composed of the devotees of fashion; it was composed of the "Gods of the Gallery," those who were there because they really wanted to be. So, we thought the mass of humanity would prefer that which will not only amuse but instruct as well, rather than that wherein amusement solely is to be found. Therefore, do we feel that if the otherwise dry facts of hygiene can be presented to humanity in a guise that will entertain while it will instruct, they will become the most popular of all facts. We have a high opinion of the intelligence of the average of humanity, and believe that the majority of men and women are earnestly striving to do the best that they know how.

Palatable Castor-Oil Mixture.

In the following preparation of castor oil the disagreeable taste of the oil is replaced by a pleasant flavor of almonds:

R. Castor-oil	30 parts.
Bitter almonds.....	2 "
Sugar.....	30 "
Gum tragacanth.....	$\frac{1}{2}$ part.
Orange flower water.....	10 parts.
Water	120 "
Mix.	

The only drawback to this mixture is that it requires a good deal of it for a dose, a teaspoonful of the oil being contained in about five teaspoonfuls of the mixture.

Sanitation and Sanity.

We are reminded by Dr. J. W. Long that the word Sanitation is derived from the latin word Sanus, meaning healthy, and attention is also asked to the somewhat significant fact that another English word, Sanity, owes its parentage to this same common ancestor. Significant, because Dr. Long truly asks whether it may not be said that when a town or community is in an unsanitary condition the people living there must be a little insane. Certainly they are not looking after their best interests, for if "all a man hath he will give for his life," and then allow a filthy pig-pen or water-closet to stand near his back door, he needs to have a guardian for him.

A Gingerbread Barometer.

It is nothing more or less than the figure of a general made of gingerbread which Clavette buys every year at the Place du Trone. When he gets home he hangs his purchase on a nail. You know the effect of the atmosphere on gingerbread. The slightest moisture renders it soft; in dry weather, on the contrary, it grows hard and tough. Every morning on going out Clavette asks his servant: "What does the general say?" The man forthwith applies his thumb to the figure and replies: "The general feels flabby about the chest; you'd better take your umbrella." On the other hand, when the symptoms are "hard and unyielding," our worthy colleague sallies forth in his new hat.

Gladstone's Grand Old Age.

Even in his old age, when the shadows of life must be lengthening, and the once radiant sun has begun to drop behind the western treetops, Gladstone is great and powerful. Other men at half his age feel the twangs and twinges of approaching age; other men of three-fourths of his years lose sight of all interest in worldly affairs and look only ahead into the gloom of night which awaits them. With the Grand Old Man the usual order of things is reversed. With him there is all the buoyancy of youth and hope and ardor, coupled with wisdom, sapiency and discretion of age. He is making a great battle in a great manner. He may go down to the arms of death before the laurels of victory are pressed to his brow, but he can never meet defeat.

To Preserve Ice in the Sick Room.

The Albany *Medical Annals* gives us the two following suggestions, which may prove very well worth remembering, as occasions arise :

1st. Fill the pitcher with ice and water and set it on the centre of a piece of paper : then gather the paper up together at the top and bring the ends tightly together, placing a strong rubber band around them to hold it close, so as to exclude the air. A pitcher of ice water treated in this manner has been known to stand over night with scarcely a perceptible melting of the ice.

2d. Consists simply in tying a piece of flannel over the top of a good-sized tumbler, pushing it first down so as to make a pocket half way to the bottom of the vessel. A penknife blade may be thrust a few times through the dependent portion. Throw into this the ice broken in suitable lumps for use. It will keep all night, especially if another piece of flannel is thrown loosely over it, the water formed as it melts dripping away into the tumbler.

Restricted Immigration.

Certainly, the recommendation of Surgeon-General Hamilton that more care should be exercised in reference to the immigration of diseased or disabled persons into this country is well worthy of careful and thoughtful consideration. When we add to the one man in every fifty receiving Government aid (as shown in our pension report), the number of disabled persons in every county almshouse, and of worthless persons in every county jail, we stand appalled at the comparatively small number of valuable, working men in this country, who are contributing, as they should, to individual and national prosperity. Certainly, we have a large enough number of dependents without increasing the list. We should have, as we require, most stringent legislation to prevent the worthless, dependent population of other nations from landing on our shores. Let us welcome all good, able-bodied immigrants, but let us exercise a wholesome discretion.

International Congress of Hygiene.

The honorable secretaries of the Committee of Organization of the Seventh International Congress of Hygiene and Demography, call attention to the fact that this congress will be held in London during the week beginning August 10th, 1891. The governments of all countries and municipalities, and public health authorities, universities, colleges, and societies occupied in the study of sciences more or less immediately connected with hygiene, are invited to co-operate and appoint delegates to represent them at the congress. The Prince of Wales will preside. A Committee of Organization has been formed, of which Sir Douglas Galton is chairman, and Professor W. H. Corfield and Mr. Shirley F. Murphy are honorary secretaries. An exhibition of articles of hygienic interest will be held in connection with the congress. The last of these congresses was held in Vienna in 1877, and was attended by over 2000 persons, and it is expected that the London meeting will be one of great magnitude and importance.

Milk Substitute for Infants.

Dr. L. Rochester has used with success the following, in cases when the mother's milk was insufficient in quantity or quality, or when it was desired to wean the infant :

Yolk of egg,	No. 1.
Sugar of milk,	6 teaspoonfuls.
Filtered water,	7 oz.

Dissolve the sugar of milk in the water and add gradually to the yolk of egg, stirring constantly.

This is fed perfectly cold, in small quantities at a time, for twelve hours, gradually increasing the amount and lengthening the intervals, until finally the full amount is given four times in the twenty-four hours.

The Spitting Habit.

No decent person will deny that the too prevalent habit of spitting here, there and everywhere is, to say the least, disgusting. Now, in the light of recent developments, it would appear that this habit is not only disgusting, but absolutely and definitely dangerous. Whether Koch's bacillus is the cause of consumption or not, there is one fact upon which we all agree, namely, that the sputa of a consumptive contains the seeds of the disease. That consumption is spread by the indiscriminate expectoration of consumptives is a now well ascertained fact, but, probably, this fact has never been more conclusively demonstrated than by the following occurrence: In a certain business house in Paris twenty-two persons were employed. Among these was a consumptive who coughed and spit upon the floor for three years, and until within three months of his death. This was in 1878, and since that time fourteen out of the twenty-two men have died with pulmonary consumption.

Don't Hear Everything.

The art of not hearing should be learned by all. There are so many things which it is painful to hear, very many of which, if heard, will disturb the temper, corrupt simplicity and modesty, detract from contentment and happiness. If a man falls into a violent passion, and calls us all manner of names, at the first word we should shut our ears and hear no more. If in a quiet voyage of life we find ourselves caught in one of those domestic whirlwinds of scolding, we should shut our ears as a sailor would furl his sails, and, making all tight, scud before the gale. If a hot, restless man begins to inflame our feelings we should consider what mischief the fiery sparks may do in our magazine below, where our temper is kept, and instantly close the door. If all the petty things said of one by heedless or ill-natured idlers were brought home to him, he would become a mere walking pin-cushion stuck full of sharp remarks. If we would be happy, when among good men we should open our ears; when among bad men shut them. It is not worth while to hear what our neighbors say about our children, what our rivals say about our business, our dress or our affairs.

Grave Digging as a Sanitary Measure.

General Winfield Scott, whose name was more familiar to the past than to the present generation, was not only a great soldier, but a wise man, and considerable of a sanitarian. Away back in 1832, when cholera made its appearance among the soldiers of his command, at Rock Island, General Scott acutely observed that the disease almost always occurred among those of intemperate habits. With characteristic originality an order was at once issued, that any soldier found intoxicated, should, as soon as he was able, be made to dig his own grave, because, as the General observed, it was most likely that such grave would soon be required for the man himself or some drunken companion, and it was not just that good and temperate men should have imposed upon them the labor of digging graves for their worthless companions. The moral effect of this order checked the prevalent drunkenness, with the result that the disease was brought under control.

Sewerage.

The great sanitary problem of the future is the disposal of the sewage of our large cities in some other and better manner than furnishing it to our neighbors below to drink. It does seem that some inventive genius could hit upon a plan that would be equal to the task of returning this vast amount of waste to the soil where it belongs, in the shape of a cheap fertilizer, and thus keep up the productiveness of the soil and protect the health of the people at one and the same time. Millions and millions of dollars' worth of the best fertilizing agent known is annually thrown into our streams to pollute their waters with disease-producing germs that ought to be utilized in restoring impoverished lands in the vicinity, and increasing and cheapening the food supply of the people. There is a large fortune in store for the one who devises a practical plan for utilizing sewage as a fertilizer, and, more, he will be the greatest humanitarian and philanthropist of the age.—*Editorial in Country Doctor.*

Hot-Water Remedies.

Headache almost always yields to the simultaneous application of hot water to the feet and back of the neck.

A towel folded, dipped in hot water, wrung out rapidly and applied to the stomach acts like magic in cases of colic.

There is nothing that so promptly cuts short congestion of the lungs, sore throat or rheumatism as hot water when applied promptly and thoroughly.

A towel folded several times and dipped in hot water, and quickly wrung and applied over the toothache or neuralgia, will generally afford prompt relief.

A strip of flannel or napkin folded lengthwise, and dipped in hot water, and wrung out, and then applied round the neck of a child that has the croup, will usually bring relief in ten minutes.

Hot water taken freely half an hour before bedtime is the best cathartic possible in the case of constipation, while it has a most soothing effect upon the stomach and bowels.—*Hall's Journal of Health.*

Pensions versus Hygiene.

Certainly, the last annual report of the Commissioner of Pensions furnishes a vivid argument in favor of a general dissemination of hygienic knowledge from the standpoint of national financial economy. From this report we learn that during the past year the enormous sum of \$106,493,890.19 was disbursed in pensions, while more than half a million names are on our pension rolls. Think of it; with our population of 63,000,000, more than 500,000 pensioners; one person in every 125 of our total population (including men, women and children) on the pension list. More than 400,000 of these pensioners are men; if we assume that there are about 20,000,000 men in this country, then we are amazed to find that one man out of every fifty whom we encounter on the street (on an average) is a pensioner. Much of the disability for which these pensions have been allowed has been brought about by a disregard of the laws of hygiene, and a great portion of this money would have been saved to the government had the people been more familiar with the laws of healthy living.

The Potency of Women.

We have always been anxious to enlist the sympathy and co-operation of women in our sanitary work, because we have realized that whatever women do they do with a will and thoroughly. One woman thoroughly in earnest is worth a dozen men to any cause. We are glad to find that so distinguished an authority as Speaker Reed seems to hold this same exalted view of woman's influence, for he attributes to womanly power the results of the late elections. Mr. Reed says that he is inclined to think that the most important factor in the result of the election was the women of the country. It is the women who do the shopping, who keep the run of prices, who have the keenest scent for increased cost. They heard in every store the clerks behind the counters explain how this article or that could not be sold hereafter at the former price, because of the McKinley bill. They went home and told their husbands and fathers, and their stories had a tremendous effect at the ballot-box. If we can interest the women in hygienic reform, we can have a sanitary cyclone that will pale, by comparison, the late political whirlwind.

Girls Who Make History.

With this caption, Harry E. Rood gives some very good advice, in the *Philadelphia Press*, to those young girls, just out of school, who are destined to be the mothers of the next generation. Mr. Rood, recognizing the wonderful resources and possibilities of this great country, and realizing the part that these girls will play in preparing the men who are to make the future history of the land, gives them some very good advice calculated to qualify them for this all-important task. But we are sorry to say that Mr. Rood has too little to say to these girls about their physical development. From a mental aspect, as regards the training of the mind, he leaves little unsaid, while only a scanty paragraph or two are devoted to the question of physical development. This omission we would supply by asking our girls to so live that they will be able

to transmit an abundance of vitality to their offspring, without themselves feeling the loss. An invalid woman cannot be the mother of a vigorous child, and it will require vigor that one may shine prominently in the future history of our country. It is a duty that the mothers of to-day owe to their budding daughters, who will be the mothers of to-morrow, to impress upon them the fact that vigorous, rugged health means vigorous, healthy motherhood, and that this latter brings with it that happiness, contentment and self-complacency that will make life really worth living.

The Late King of Holland and His Offspring.

That the riotous life led by the late King of Holland had not killed him long since has been frequently commented upon by the newspapers, but to our mind the case was something like this: Let us suppose that Jay Gould should convert all of his securities into cash, and start out to spend the money. It would be, practically, impossible for him to get rid of it all, but he would have, comparatively, so little left to hand over to his children, that, if they followed in his footsteps it would not take long for them to disburse that which they had received. So was it, physically, with the house of Holland. The old King, coming from a sturdy ancestry, had so much physical vigor that he was able to make drafts upon it, successfully, for 71 years; but he had so little vigor left to transmit to his offspring, that lives of dissipation on their part soon exhausted their little inheritance. As with the King, so with the peasant. While the strong man may, *apparently*, resist the evil results of dissipation, he is surely consuming that which he must transmit, in its deteriorated condition, to his offspring.

Are School Teachers Lazy?

We hope not and we think not. But, sometimes, when we reflect upon the amount of "home study" that is allotted to our little children, we wonder whether the burden of education does not, after all, fall rather upon the parents than upon the teachers. There is one thing sure, that we have altogether too much "home study" in the educational system of to-day. Theoretically, a child goes to school to be educated; practically, he goes to school to be told what to study at home. Sanitarians are united in proclaiming that a man should leave his business at his office, and the same doctrine would teach us that a child should leave his studies at his school. Dr. Richardson, in the article which we elsewhere publish, tells us that eight hours should constitute the working day of a man, yet our school system in this country, that is to say the average of our schools, would make the working day of a child at least nine hours, that is, say five hours of school and four hours of "home study." This is all wrong; that which cannot be learned in school hours should go unlearned; "home study" should be abolished, and when it is and the time now thus employed devoted to healthful recreation, our boys will begin to grow into stronger men, and our girls will be able to become the healthy and vigorous mothers of healthy and vigorous children.

The Dictates of Fashion.

We thoroughly recognize the futility of antagonizing the dictates of fashion, hence we have it always in mind to endeavor rather to reconcile hygiene with fashion than to teach a hygienic code that is in opposition thereto. In the matter of woman's dress, we place side by side a so-called stylish or fashionable costume and one that is hygienic, designed after the Jenness-Miller pattern.



LOUIS XIII. JACKET.



ART, COMFORT AND BEAUTY.

Now, we would ask our readers if there is anything gawkish, unpleasant to the eye, unæsthetic, unfashionable, in the health-giving costume, as we see it here. Rather, to our way of thinking, is the other style, awkward, angular and forbidding. We believe it to be the aim of dress to adorn the form. Which makes the most pleasing adornment? Certainly, if we can combine beauty and health in dress, that style which secures this combination ought to be, if it is not, the fashion.

The Progenitors of Great Men.

We have always been fond of a theory that he who is utilizing any special attribute to excess will not be able to transmit much of this special feature to his offspring. The great mental lights of the world have not been the offspring,

as a rule, of those who were noted for intellectuality. Thus Columbus was the son of a weaver. Cervantes was a common soldier. Homer was the son of a small farmer. Demosthenes was the son of a cutler. Oliver Cromwell was the son of a London brewer. Franklin was a journeyman printer, the son of a tallow chandler and soap boiler. Daniel Defoe was an ostler. Cardinal Wolsey was the son of a butcher. Virgil's father was a porter. Shakespeare was the son of a wool stapler. Milton was the son of a money scrivener, and Mohammed was a driver of asses. Not originating from intellectual progenitors, neither do we find these mental giants producing intellectual offspring. From which facts we are led to think that he who would wish to be most useful in this world and to leave behind a progeny equally useful and healthy and happy, should strive to avoid, so to speak, the "concentration of activity." As "variety is the spice of life," so diversity of pursuit is, we incline to think, a promoter of health and usefulness both in the individual and his offspring.

The Abuse of Soap and Water.

It is a fact that the best of things may be overdone, and Dr. B. Merrill Ricketts, of Cincinnati, has come to the conclusion (*Journal of Cutaneous and Genito-Urinary Diseases*) that to the abuse of soap and water is to be attributed a certain skin affection found almost exclusively among society women, or those persons who are fastidious in the care of their skin, especially that upon the face. In this disease the skin is reddened, with more or less scaliness and considerable burning, especially when exposed to either hot or cold currents of air. At times it is quite painful, often causing loss of sleep. As may be imagined, it is most common with those who have sensitive, delicate skins. The women who suffer the most are those who wash their faces frequently, at the same time using soap and water with a rough, coarse towel well applied, thereby producing an excess in the exfoliation of the cuticle. This result is hastened by the use of the various cosmetics several times each day. Dr. Ricketts quotes the statement made to him by one who is considered a society belle, that she applies Lubin's powder twelve times in thirteen hours, each time applying it after the face has been thoroughly washed with Pears' soap. He very pertinently asks, "How long would the leather in our shoes withstand such treatment?" Washing the face and hands with pure water aided with a wash-rag or soft sponge, and drying thoroughly with a very soft towel is, perhaps, the best way to keep a good skin.

The Slender Waist no Longer Fashionable.

There can be no question but that fashion rules the world, hence when fashion favors hygiene, we feel that the time is coming when hygiene will surely hold universal sway. In the matter of women's waists fashion and hygiene are now in accord, for we learn that, in obedience to fashion's mandate, the slender waist has bidden us adieu. Nineteenth Century beauty of form consists not of thinness, or even slenderness, or what is usually termed gentility of figure. Prior's

"small by degrees and beautifully less," and the late Duchess of Devonshire's waist of an orange and a half are not the ideal figures of to-day.

The Delsarte maiden who supports this opinion will refer you to the Medician Venus, the most celebrated of Grecian statues. A single glance will convince you of the fallacy of those ideas of beauty which have been formed by the advocates and admirers of small waists and slender figures. The body and limbs of that paragon of beauty are round and full.

Examine still further and suppose, for a moment, that the Medician Venus were to be placed in the hands of one of our first-class dressmakers to be invested with the usual quantity of clothing now worn, all fitted perfectly to the shape. The result would satisfy us that modern forms produced by tight lacing are destructive to health as well as to beauty, and bear no analogy to that lovely, graceful and exquisitely beautiful model of antiquity. Whatever is mean or scanty in nature or in art can never be beautiful.

Brains vs. Body.

As we sat in church of a recent Sunday, and watched the debilitated form of the daughter of a late distinguished professor—a man whose reputation was world wide; and as we recalled the life history of this good man's four children, none of whom have ever had the health to make life any pleasure to them, we could but ask ourselves whether this great teacher, this man of conscience and strict integrity, had not sinned in the most grievous way. We well remember this man; we recall how precise and methodical were his ways; how free from vice his life; how earnestly he trained his children's minds, and at the same time the reflection stole into our own mind that this great man's mind had been so predominantly developed that he had but little physique left to transmit to his offspring, and that the little which he did transmit was nullified by the mental training to which, through mistaken kindness, he had subjected his children. Mental culture is well enough, but when carried to an extreme it is an abomination that cannot be too strongly condemned.

Leonine Training.

John M. Laffin, the noted trainer, thus wisely discourses on physical exercise:

"The forms of physical exercise—athletic training, it seems to me they may very properly be called—those which I most approve of, are indeed similar to the lion's hunt for his dinner; such, for instance, as long tramps over the mountains with rifle or fowling piece or struggles down a slippery trout brook. That's leonine training with a vengeance, and the man who pursues it may have no more idea he's 'exercising' than the lion has. And as for hard work in the way of unconscious training, I should like to know who could find anything harder to do than the bear when he climbs a bee tree and strains every muscle and nerve in his great, massive body to scale the long ascent, a hundred feet, maybe! Breaking rock isn't a circumstance to it. Their nat-

ural habits keep them in condition, Checkley says. Of course they do, and when man lives in a state of nature, like the North American Indian a hundred years ago, perhaps, on the plains, his natural habits, too, make him a physical model. But a citizen of New York can't expect his natural habits to keep him in training ordinarily.

"Athletic instructors nowadays do not use the heavy dumb bells and weights and Indian clubs that used to be in favor some years ago when Dick Pennel shoved up 204 pounds, the biggest weight on record, and Dr. Winship lifted 2800 pounds, I think it was, in harness. It was said that the strain killed him, and I would not be surprised if the saying were true. Violent strains on the muscles are no longer even countenanced by the best trainers. I recommend one pound dumb bells for men and half pound dumb bells for women. The kind of Indian clubs most advisable for use now would be two or three pound instead of the twenty-five or thirty pounders affected some years ago."

Immigrants and Skin Diseases.

In concluding an interesting paper on the skin diseases of immigrants (*Journal of Cutaneous Diseases*, October, 1890), Dr. James C. White says:

Unless some more stringent laws are made to keep out of our country the pauper and dirty population of Europe, the direct importation of the diseases we have been considering, and those which may arise as well from the filthy habits they bring with them and transmit to their children, must follow with increasing magnitude. If the proposed plan of the U. S. Marine Hospital Service, to station physicians in every European port from which immigrants embark to this country for the purpose of keeping back improper classes, be made sufficiently authoritative and restrictive it cannot fail to be of vast benefit. It is certainly as important to protect ourselves by legislation against the introduction of ignorance, filth, and disease, as against cheap labor, if we would keep our civilization upon a high plane. The Chinese have set us an example of building walls, which we might better erect against other nations than theirs.

In conclusion, I venture to suggest for the consideration of this association the propriety and importance of memorializing the National Government with regard to taking such steps as may be possible and practicable for the establishment and execution of the following measures:

1. To cleanse all immigrants of animal parasites on landing by treatment of person and clothing.
2. To retain in quarantine all immigrants with other contagious diseases, including venereal affections, a sufficient time for treatment.
3. To return to their homes all persons affected with such contagious diseases as it is impracticable to treat in such a way, as leprosy, tuberculosis, and advanced syphilis.
4. To provide for efficient medical inspection at foreign ports of emigration, with the power of arresting importation of dangerous diseases to this country.

Why Football is Popular.

The cut which we here reproduce makes it very evident why football is, to-day, such a popular game.

The admiration of a young, pretty and blooming girl is the incentive that will always drive a young man to do that upon the doing of which this said young girl will look with approbation. The influence of girls over boys, as of



The Modern Foot-Ball Hero (Disfigured, but Happy) has a Dozen.
The Ancient Knight Errant had ONE Queen of Beauty.
"Fully 10,000 ladies were in the crowd at the Yale-Princeton Foot-Ball Match Thanksgiving Day."—Daily Paper.

women with men, is one of the mightiest levers of the world. While it may be that, with the crusty and dyspeptic old bachelor, the shortest route to the heart lies through the stomach, such is not the case with the ardent young collegian, whose heart can be reached directly, without any circumvention, by the approving glances of any coy maiden. Awarding to our young ladies this enormous influence, to which they are justly entitled, in the regulation of the habits and customs of our young men, let us beg of them to cast it in the scale against the brutal game of football, which, as played to-day, is destined to brew for them in after-life the misery of *invalid husbands*. Let these young ladies smile not upon the man who, because he is possessed of brute-, bull-, horse-strength can excell at football, but rather let them encourage, by favoring, that rational system of physical culture that vouchsafes health, while it gives strength. Football is popular because the young ladies have smiled upon it; let them but frown and it will fall into its well-deserved disrepute.

A Healthy Aristocracy.

As nations emerge from their swaddling clothes, and approach that era of progress and culture wherein an aristocracy becomes a possibility, we find that the cultivation of health, so to speak, becomes an important part of their internal economy, while, as time progresses, and national "old age" supervenes, we note a disregard, so to speak, of this vital subject. Thus, in active, progressive England, Germany and those countries in their prime, we will find a "healthy aristocracy," while in the more senile nations of Spain, Turkey and the like, while we still find the most aristocratic of aristocracies, it is a decrepit and unhealthy aristocracy. This great country of ours has now reached that period of its development when the establishment of an aristocracy will become inevitable. Let us earnestly hope that it will be rather a vigorous aristocracy of health than a decrepit and rotten aristocracy of wealth. The distinguished President Eliot, of Harvard College, discusses this coming aristocracy in the December *Forum*, and so thoroughly in accord with our own are his views that we here reproduce a portion of them:

"What, then (he asks), are the means of perpetuating good family stocks in a democracy? The first is country life. In this regard democracies have much to learn from the European aristocracies, which have proved to be durable. All the vigorous aristocracies of past centuries lived in the country a large part of the year. The men were soldiers and sportsmen, for the most part, and lived on detached estates sparsely peopled by an agricultural and martial tenantry. They were oftener in camp than in the town or city. Their women lived in castles, halls or chateaux in the open country almost the whole year, and their children were born and brought up there. The aristocratic and noble families of modern Europe still have their principal seats in the country, and go to town only for a few months of the year."

Muscular Exercise and Breathing.

I was called a month or two ago, professionally, to see a young lady who was stopping at Petoskey (says Dr. V. C. Vaughan, of Michigan, in the *Sanitary Inspector*). Her folks had spared no expense in bringing her many hundreds of miles and had built there, upon the shores of Lake Michigan, a very nice cottage with a large veranda in front, where the cool, fresh breezes, as

they came from the lake, would be swept about her ; and every morning she was rolled out in an arm chair on the veranda to breathe in the pure air, and her parents were very much despondent after they had been there a month or six weeks to find no marked improvement, so they called in medical aid. As I sat there on the porch talking with the young lady, I was deeply impressed with the idea that people, as a rule, do not understand respiration. The girl had the purest air brought to her, still she was not gaining in strength at all. Her muscles were just as weak and flabby as when she left western New York, and what was the trouble? Simply this: There was no demand in her tissues for this oxygen which was brought to her in such great abundance. This demand can be created only by exercise—that is, only by exercising the muscles. The exercise in schools is one thing that is underrated (I mean physical exercise) more than anything else. The little students need gymnastic exercises every hour of the day to give them the very best of air, and they cannot utilize it unless there is a demand in their tissues for it. They cannot throw off the effete matters from the muscles unless there is exercise in the muscles, good, vigorous exercise. Let there be some drill or calisthenics which these little students have to go through two or three times a day, and the rule is, when this is done and these students are enabled to throw off the effete matter and fresh air can be brought in, that the exercise will enliven them, awaken every part of the body, and they will return to their work with renewed energy and zeal.

Lost Children.

The cases in which children are entirely lost are perhaps rare, and cases in which the parents cannot identify their children when found within a few years, as in the case of the Charlie Ross abduction, are still rarer, but they occur with sufficient frequency to make every precaution necessary (says the *Sanitary Record*). There was picked up in one of the city parks the other day a boy about 4 years old, who could speak three languages but could not tell his own name nor where he lived. It is of the first importance that the moment children can do so, they should be taught to reply to the question, "What is your name?" in two or three forms: as "Tell me your name?" "Can you tell me your name?" etc.; for having learned to reply to only one form, the child might be confused with either of the others. Also, "Where do you live?" "What street do you live on?" "What is papa's name?" "What is marama's name?" are the questions which should be repeated often until well impressed, the child being taught the replies he is to make if strangers ask him these questions. Even should he become confused and give the replies to the wrong questions, there could be sufficient information gathered to enable those finding him to return him to his home. Previous to the time when he can speak his replies with such plainness that anyone can understand him, he should be tagged. It is well when dressing the child in the morning to fasten round his neck under his dress a ribbon, to which is attached a tag with his full name and address. Then if he slips out unawares, as children have a way of doing, and

wanders off, his friends will soon be able to identify him. If this precaution were taken by every mother, many heart-aches and moments of agony might be saved. Sewing an address card in the hat is also a good plan, but not so certain, since the hat may be not always worn, or the child may lose it.

Duty to Mother.

A father speaking to his careless daughter, said : " I want to speak to you of your mother. It may be that you have noticed a careworn look upon her face lately ; of course, it has not been brought there by any act of yours, still it is your duty to drive it away. I want you to get up to-morrow morning and get the breakfast ready, and when your mother comes down and expresses her surprise go right up to her and kiss her. You cannot imagine how it will brighten her dear face. Besides, you owe her a kiss or two. Away back, when you were a very little girl, she kissed you when no one else was tempted by your fever-tainted breath and swollen face. You were not as attractive then as you are now, and through all those years of childish sunshine and shadow she was always ready to cure by the magic of a mother's kiss the little dirty, chubby hands whenever they were injured in those first skirmishings with this rough old world. And then the midnight kiss, with which she routed so many unpleasant dreams as she leaned over your restless pillow, have been on interest these long years. Of course, she is not as pretty and as kissable as you are, but if you had done your share of the work during the last ten years the contrast would not be so marked. Her face has more wrinkles than yours, far more, and yet if you were sick that face would appear more beautiful than an angel's as it hovered over you, watching every opportunity of ministering to your comfort, and every one of those wrinkles would seem to be bright wavelets of sunshine chasing each other over that dear face. She will leave you one of these days ; these burdens if not lifted from her shoulders will break her down. Those worn and wasted hands will be crossed upon her lifeless breast. Those neglected lips that gave you your first baby kiss will be forever closed, and those sad, tired eyes will have opened in eternity, and then you will appreciate your mother, but it will be forever too late."—*Ex.*

A Veiled Vice.

We see the *Lady's Pictorial* of London publishes a vigorous protest against the increasing use of stimulants and " nerve tonics " by women of fashion.

The pretty, fashionable dame, who is at every smart party and function, whose name is on everybody's lips, whose dresses are the envy and admiration of her sex, does not begin with a vulgar craving for strong drinks ; and, later on, even when such a craving is engendered by her manner of life, she is too astute to indulge in intoxicants which would betray her as a tippler. It is not in the decanter that she seeks those pick-me-ups, which brighten the eyes and brace the nerves and cure the hideous depression that follows on perpetual excitement. No ; Stephanie or Susanne or Perkins would soon discover that and blazon forth the secret ; but in the accessories of the toilet, in the dainty

cabinets of the pretty boudoir, in the innocent-looking carved corner cupboard of the dressing-room, are the resources on which she relies. It is not the wine merchant who profits by this dilettante tipping, but the fashionable chemist, from whom the eau de Cologne, the draughts of red lavender, the spirits of cardamoms and the medicated wines are obtained. After last night's ball and this afternoon's concert Lady Grace has a headache, perhaps; could anything be more reasonable than that she should seek to relieve it with a spoonful of the harmless red lavender added to a little camphor? Ah, how well she feels! She is lively and bright again, ready for a dozen balls, a score of concerts. How foolish to give way to fatigue! How easy to shake it off! How infinitely more refined and safe than seeking a vulgar stimulant! Her richly-cut silver-topped toilet bottles arouse no suspicion, for are not their contents the simplest remedies for the distressing "headaches" which so frequently attack her? And the odor of a perfume or a medicament on the breath betrays no secret, even though it be there day after day.

Separate Beds.

Much of the discomfort and nervousness which people complain of when they arise in the morning is due to the fact that each does not sleep alone. There are electrical changes going on in the system during the night, and where persons lodge together night after night under the same bedding these distributing causes work destructive results.

The London *Lancet* draws attention to this evil habit, and says that there is nothing that will so derange the nervous system of a person who is so eliminative in nervous force as to lie all night in bed with another who is absorbent of nervous force. The latter will sleep soundly all night, and rise refreshed in the morning, while the former will toss restlessly, and will awake in the morning fretful, peevish, faint-hearted, and discouraged. No two persons, no matter who they are, should habitually sleep together. The one will thrive, the other will lose. This is the law. The case of the aged David and the youthful maid who was sought to impart physical energy to the king in his senility occurs to my mind. A lady in middle life informed us that she habitually arose in the morning nervous, worried, and weak, while her husband would sleep soundly all night. The touch of his foot would even awake nervousness and discomfort, while he seemed to be wholly unaffected.

To one of extreme susceptibility the fact that one sleeps with the bed pointing east and west is ominous. It is said by some scientific men to be less than suicidal for certain parties to thus locate their couches. The proper position of the bed, they say, is north and south, in harmony with the magic currents. It is easy to pooh-pooh at such suggestions. Some persons can ride backward in a carriage or car with perfect ease; ascend and descend in an elevator; can cross and recross the stormy ocean with no vertigo or nausea, while others must face with the carriage or railway train, or they suffer great discomfort. It is plain that we are not all alike, and that we must regard the electrical conditions of each one.

Aside from the admitted law, there are other reasons why this plea for separate beds should be heeded. It is a matter of cleanliness, health, and morality as well. Each person should have his own couch as truly as his own seat at the table.

Good Rules for Winter.

The following rules are worth heeding by those who believe that an ounce of prevention is worth a pound of cure.

Never lean with the back upon anything that is cold.

Never begin a journey until the breakfast has been eaten.

Never take warm drinks and then immediately go out into the cold.

Keep the back, especially between the shoulder-blades, well covered ; also the chest well protected. In sleeping in a cold room establish the habit of breathing through the nose, and never with the mouth open.

Never go to bed with cold or damp feet.

Never omit regular bathing, for, unless the skin is in active condition, the cold will close the pores, and favor congestion and other diseases.

After exercise of any kind, never ride in an open carriage or near the window of a car for a moment ; it is dangerous to health and even to life.

When hoarse, speak as little as possible until the hoarseness is recovered from, else the voice may be permanently lost, or difficulties of the throat be produced.

Merely warm the back by a fire, and never continue keeping the back exposed to heat after it has become uncomfortably warm. To so expose the back is debilitating.

When going from a warm atmosphere into a cooler one keep the mouth closed, so that the air may be warmed by its passage through the nose ere it reaches the lungs.

Never stand still in cold weather, especially after having taken a slight degree of exercise ; and always avoid standing on ice or snow, or where the person is exposed to a cold wind.

About Contagious Diseases.

There is a certain well-defined list of diseases which are commonly known to be "catching" (says Dr. C. A. Lindsley). Healthy persons catch them from those who are sick with them. Smallpox, measles, scarlet-fever are well known examples of this list. Persons sick with these diseases reproduce in their diseased bodies the specific infections which made them sick, so that others approaching them receive the infection and are made sick also. Such sick persons can also infect things and places, so that others in contact with such infected things and places, though the sick person be absent, will also receive the infection and be made sick. The above statements are not in dispute—no one questions them—they are settled and accepted facts. It is also true that the only way to acquire any of these contagious diseases is by exposure to the presence of such sick persons or to such infected places or things.

It follows as the inexorable logic of these facts, that the spread of these diseases is due to the transmission of the infections which produce them to the persons who catch them ; that is, to their exposure to the infected persons, places or things. And that if persons had not been so exposed they would not have had the diseases.

During the thirty-one days of last month, nearly seventy persons in this State (Connecticut), mostly children, perished from such exposure. Then again, there were many sick who did not die, so that probably for the sixty and odd deaths there were 500 or 600 ill, who have fully or partially recovered.

From the known facts about contagious diseases, it will be admitted that none of these cases would have occurred if the sufferers, mostly children, had not been permitted to expose themselves to these infections. In other words, these deaths were avoidable. Bereaved families need not now be in grief for lost loved ones, or have been anxious about the 500 or 600 sufferers, if due precautions had been taken against exposure to infected persons, places and things. But neglect of proper care is almost the universal practice. Boards of health in vain enact regulations requiring parents and physicians to report contagious diseases. Too often both ignore the law or neglect it until a contagious disease has become epidemic in the neighborhood. Houses containing cases of scarlet fever or diphtheria are not closed to the friendly visits of neighbors ; indeed, the presence of these diseases is often purposely concealed, and there is good evidence that even the physician is sometimes *particeps criminis* in such concealment. And thus the deadly poison of these maladies is allowed to work its fatal effects upon other people. Convalescent children with scarlet fever or diphtheria are sent to school or even the Sunday school while they are still active centres of contagion. If such culpable disregard of public safety is not a crime against the community, then the careless switchman who derails a passenger train, or the heedless engineer who plunges it into an open drawbridge, are not criminals, and incendiarism and burglary are trivial misdemeanors.

The Influence of Mind over Body.

It is related of Benedict Arnold, that his iron frame, which was capable of resisting the rigors and exposure of warfare, was finally conquered and subdued by the mental depression produced by contemplation of his wrecked and ruined life. So is it always with all of us. Serenity of mind will produce serenity of body, and this means health and longevity. The control of the mind is within the power of every sane person when he once thoroughly makes himself believe that he can so control it.

Disinfecting Cattle-cars.

The police prefecture of the Seine has ordered that all cars used for the transportation of cattle to the abattoirs of Paris shall be thoroughly disinfected after each trip. The process of disinfection is carried out under the supervision of four veterinary inspectors, and is effected by thorough washing of all parts of the cars with a 2 per cent. solution of sulphate of zinc.

Strength and Health *versus* Agility and Disease.

The simple motions (made without the aid of dumb-bells or Indian clubs), which are rendered intelligible by these cuts, will give both health and



strength to all the upper portion of the body. He who will perform these varied movements, commencing with 100 times daily and gradually increasing

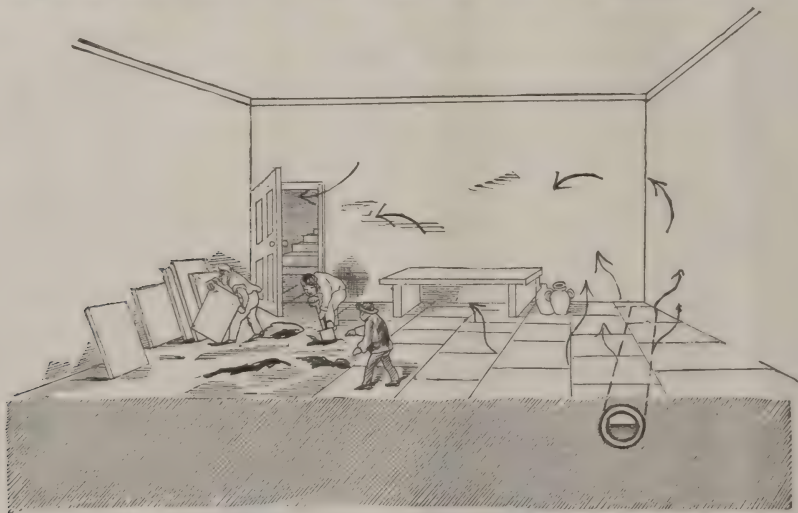


to 500, 1000, 1500, or 2000, will be both surprised and gratified at the physical development of the arms and chest thereby produced. No doubt, the would-be athlete will find the movements and attitudes herein depicted more pleasing to

the eye and will think them more worthy of imitation than the commonplace movements we have commended. But, mark our words, while the former will vouchsafe health and strength and long life, the latter will, while giving to us temporary agility, surely result in disaster to our vital organs.

Always Have a Plan of Your Plumbing.

How familiar to many of our readers will be the situation depicted in the cut which we have reproduced from Mr. T. Prigdin Teale's admirable work. Something is wrong with our plumbing and we send for the plumber. He knows nothing of the way in which the work has been originally done, so that he is compelled, as it were, to "grope in the dark," as these men are doing,



commencing, as we see, at the wrong end of the cellar and tearing up the whole floor before they will discover the offending drain. Think of the unnecessary annoyance, inconvenience and expense thereby entailed. If, when the services of a plumber are required, you can lay before him an intelligent plan of your plumbing, the plumber, it is true, may not get so rich, but you will have a larger balance in bank when you are done with him. Therefore, when you have plumbing introduced into your house see to it that you have the work done according to an intelligently drawn plan, and when completed file this plan away for future reference.

An Infant Medical Phenomenon.

The Southern Medical Society in Atlanta has recently elected to honorary membership a boy phenomenon, who, though only 5 years old, has already acquired a knowledge of anatomy which is fully equal to that of most graduates of medicine. He is a regular attendant upon the anatomical lectures at the Southern Medical College, though he is himself, at present, a matriculate of the kindergarten department of a local academy, where we are informed that his long, golden curls, rosy cheeks, intelligent blue eyes, and amiable disposition make him a general favorite.—*Boston Medical and Surgical Journal*.

Do You Know How to Walk Up-Stairs?

Hydraulic engineers tell us that it will require a much more powerful pump to lift a body of water to a height of sixty feet than to force it along on a level. Have you ever paused to reflect that when you are ascending to the top of a five or six-story building, your heart is, in reality, the pump that is lifting you to this height, as it is furnishing to your muscles the vitality that enables them to elevate your body. Neither is this human pump (the heart) any stronger or more powerful than it was but a few moments before, when it was propelling you along a level on the street. If it is not any more powerful, yet is called upon to expend more power, it must be evident that an extra strain or effort is required to meet this extra demand. Such being the case, it is obvious that we should reduce this strain to the minimum, which we can do by ascending each flight of stairs slowly, and pausing at the top, on each landing, until our sensibly pumping hearts have recovered their normal equilibrium. The man of 45 will do this by instinct, but it is the young man who will run from floor to roof who needs our caution, which, if neglected, will leave him, when he is 45, with a damaged pump with which to pump the rest of his way through life. That which applies to the ascent of six flights of steps will, with modifications, apply equally to one flight.

Immunity and Infection.

These conditions have recently attracted marked attention from Continental writers, especially in Italy and France. Numerous theories have been advanced; none of them can be said to have been wholly satisfactory, or to account for all the varying and apparently contradictory facts.

Charrin et Roger (*Contribution à l'étude expérimentale du surmenage. Son influence, sur l'infection. Arch. de Physiol.*), have made some experiments regarding the effect of fatigue upon infection, upon lines laid down by Solowieff, who demonstrated upon horses and men that great fatigue favored the development of certain infectious disorders. In their experiments animals were employed, that had been exercised in a revolving drum. The reaction of different species to this treatment was found to vary greatly, rabbits and guinea-pigs soon presented evidences of pain, fright and vertigo, that were soon followed by a fall of temperature and death. Dogs, cats and white rats bore this extreme exertion without special disturbance, and after running twelve hours in the drum would be in a normal condition the following day.

In the first experiment thirty-six white rats were inoculated, part with a weak culture of anthrax and part with the bacillus of "carbon symptomatique." Twenty-one of these animals were placed in the drum and allowed to run from two to eight hours; the remainder were reserved for control. The results in all the experiments were nearly equal, the animals that were fatigued died in less time than those which were allowed to remain quiet; in some instances the animals that were allowed to rest would survive the infection—the others invariably died.

A Fasting Heroine who Succumbed.

The *Weekly Medical Review*, quoting the *Hospital Gazette*, asserts that Zélie Bourrion, the fasting girl of Bourdeilles, in the department of the Dordogne, who endeavored to emulate the feats of Tanner, Succi, and Jacques, has recently died at her home. Her constitution was completely shattered after her fast of thirty-three days. When she returned to her cottage she tried to eat a little, but her stomach was unable to bear the food, and she succumbed in a few days. Her fate will serve as a warning to any persons of her sex and class who may have been tempted by the notoriety which she obtained by her fast to follow in her footsteps.

Biography of Dr. Robert Koch.

Dr. Koch was born forty-seven years ago at Clausthal, in the Hartz Mountains. He was educated and graduated at the University of Göttingen. Shortly after taking his degree he established himself in a village near Hanover and began to practice as a physician. Finding, however, that it was impossible to make both ends meet, he migrated to Rackwitz, a little malarious town in Prussian Poland, which he subsequently deserted for Wollstein. It was while there that his name came before the public, in 1880, as an expert in connection with the famous Speichert poisoning case. The conviction of the prisoner in this *cause célèbre* was entirely owing to the remarkable analyses and medical testimony of Dr. Koch, which attracted widespread attention by reason of their profound erudition. Later he made some remarkably accurate studies in septicæmia. In 1882, he first made the great discovery that tuberculous diseases were due to the existence of bacilli. In 1883, his labors were interrupted by his being placed at the head of the medical commission dispatched by the German Government to Egypt and India for the purpose of making researches into the origin and the causes and prevention of cholera. It was while at Calcutta that he succeeded in discovering the like germ of cholera. On his return to Germany he was rewarded by the Government for his researches with an honorarium of 100,000 marks, with the rank of Privy Councillor, and with the Rectorship of the Imperial Institute of Hygiene.

State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania.

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PLACE OF MEETING,

Supreme Court Room, State Capitol, Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Thursday in May, July and November.

THE
ANNALS
OF
HYGIENE



VOLUME VI.
Philadelphia, February 1, 1891
NUMBER 2.

COMMUNICATIONS

An International Congress of Microbes at Berlin.*

BY GOUVERNEUR M. SMITH, M.D., of New York.

MICROSCOPICAL midgets
Were getting the fidgets,
On hearing the horrible news,
That the microbes were slaughtered—
Were starved and were quartered,
'Twas surely a cause for the blues.

Smallest plants and wee bugs
Are not dull, snail-like slugs,
But form a unicity rare ;
They commune with each other
(Each kingdom a brother)
When both have a terrible scare.

So an edict went forth
East and West, South and North,
For the Microbes in Congress to meet
In the place where a sage
Who is now all the rage,
Thinks such elfins—each one—a dead beat.

A great polyglot crowd
Of wee Liliputs proud,
Assembled in solemn conclave,
And those speaking Phthisis
With warm exegesis,
Besought all their friends to be brave.

Then one spoke in Lupus,
With tones base and croupous,
And said he was "not a bit blue,
I'm not yet like Othello—
And will fight a duello,
With Koch or some one of his crew."

A tenor, in Typhoid,
With gestures quite cycloid,
A tiny Professor,—then said
"On mankind I'll still sup,
I won't give his flesh up,
And of starving I'm not yet afraid."

A speech in hard Cancer,
By a wise geomancer,
Foretold of a bright coming time,
When no more on the earth
Would there be human birth,
As the microbes were just in their prime.

And with man quite extinct,
It was clearly distinct
The Germs would then evolve gay,
Be lords of creation—
The great innovation,
At which Time was now making a play.

In Cholera lingo,
One said that,—“By jingo
Men eat their choice game with suave grace.
We'll feed on their flesh-pots,
These devilish despots,
Until we have eaten their race.”

In co-operation
These dwarfs of each nation
In solemn alliance agreed,
“Fierce aggression severe,
More and more every year
Till the earth of mankind was quite freed.”

They adjourned for a dance
In high glee and joyance,
And whirligigged round like young nymphs :
In Koch's parlor so gay
They danced a whole day
And laughed at his new-fangled lymphs.

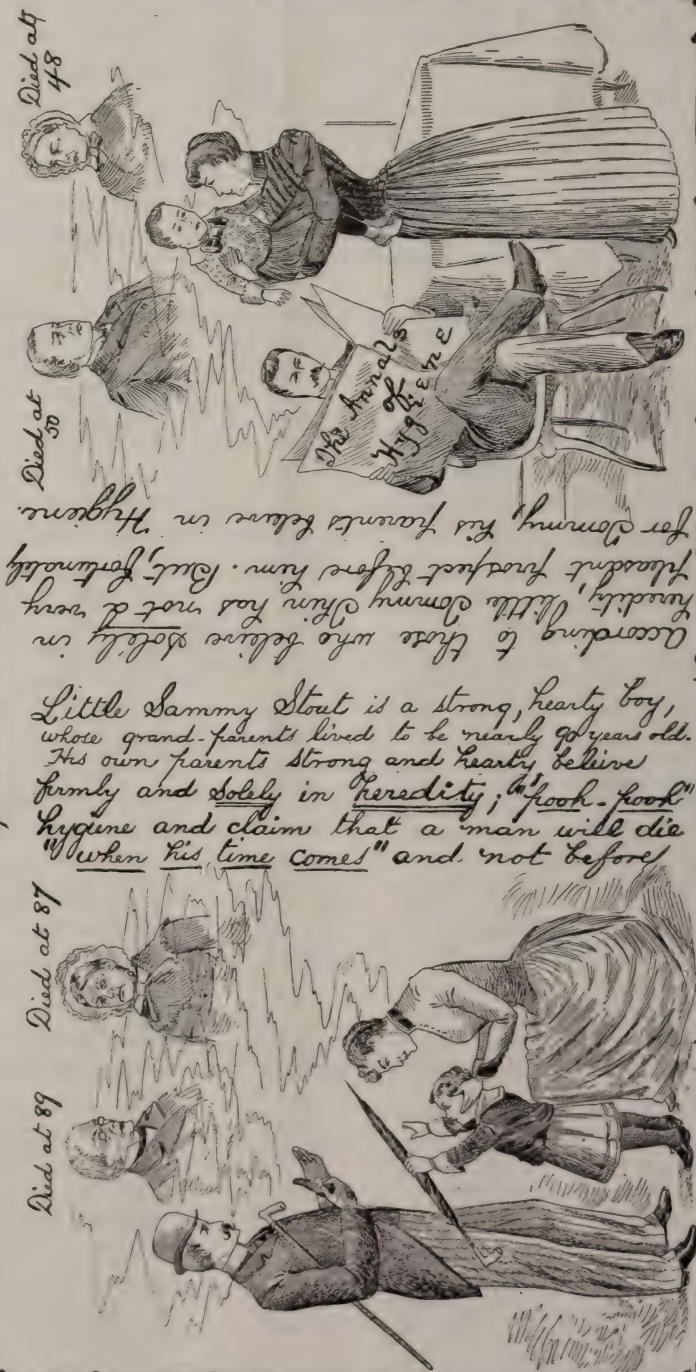
Then they wound up the fête
With a feast quite ornate,
Consuming wise doctors, a score
And drank their own health
In the lymphs, got by stealth,
And wished they had kegs and kegs more.

The Relative Influence of Heredity and Hygiene on Longevity

in 12 Chapters

A picture and
a picture and

by the Editor



According to those who believe solely in heredity, Little Sammy Stout has not a very pleasant prospect before him. But, fortunately for Sammy, his parents believe in hygiene.

Of course, Sammy must be educated; he must keep up with his class and his evenings are devoted to hard study; his mind; ~~he is~~ ^{he is} born to a long life;



But Tommy, poor little fellow, is not strong; he goes to school (in the country, where he lives) for about two hours each day; has no lessons to learn at home and spends most of his time in out-door play.



Sam knows all about Horace and Virgil and Xenophon; he can solve almost any problem in mathematics and he will soon be ready for the "High School", but his appetite is not very good, he does not sleep well and complains so much of headache. He feels the cold so much that he must be wrapped up like a mummy when he goes out.



The vital forces are so weak that Sam cannot stand cold.

He would like to have a sled, and a pair of skates, but his school duties are so exacting, that he has but little time for play. No matter, he is destined to a long life and, when his education has been completed, he can enjoy himself.

Outdoors, but there are mighty few boys that can beat him at skating, or swimming. Now he can ride and play ball, and eat and sleep and, though he has but little education, comparatively, this fact never seems to annoy him, for as he grows in length and girth, and seems, all, to expand in happiness and contentment. Sam is now regarded, by

the neighbors as a healthy boy.



Sam is never cold; healthy boys, who exercise well, never are.

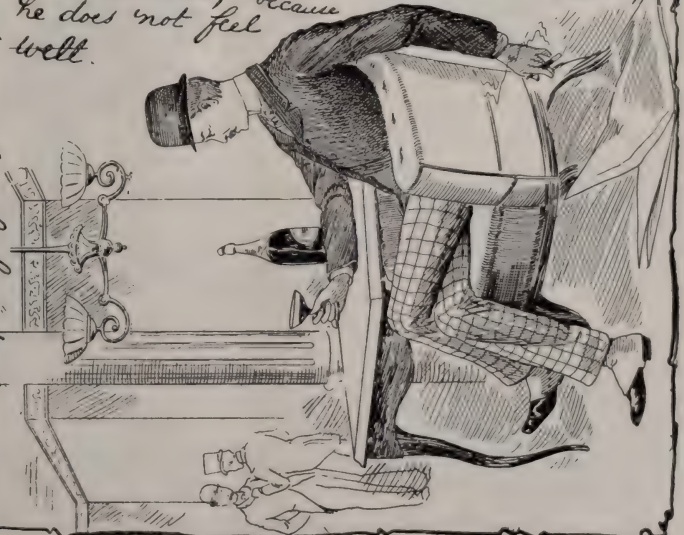
Sam can read and write and he knows some little about

Mr Stout is continually urging his friend Stout, whom he believes is killing himself by over-work and artificiality, to move to the country and build up his health, but Stout, being a city-bred man is not familiar with the charms of home nature and does not "hanker" for the "lonely" country.



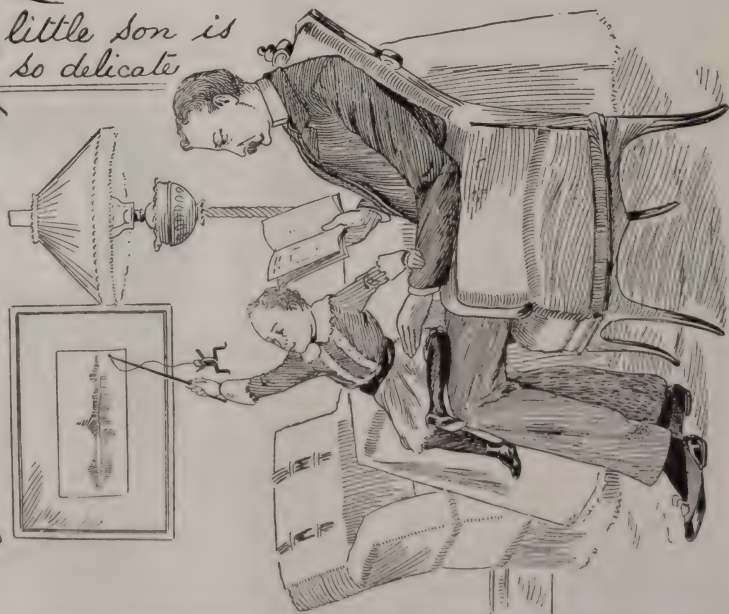
Mr Stout has graduated at the University and is generally regarded as one of our brightest lawyers. Mr Stout moves in the first circles of society; every evening finds him at "The Assembly" or at some ball or party. He is not dissipated; in fact, he is a most exemplary young man; but his friends

all say that he is not very strong; he does not care particularly for wine, but occasionally indulges in a glass at his club, because he does not feel well.



"Mr. Stout in due time, has married a 'Society Belle', one who best vitality has been given to 'Society' and he wonders why his

little son is so delicate

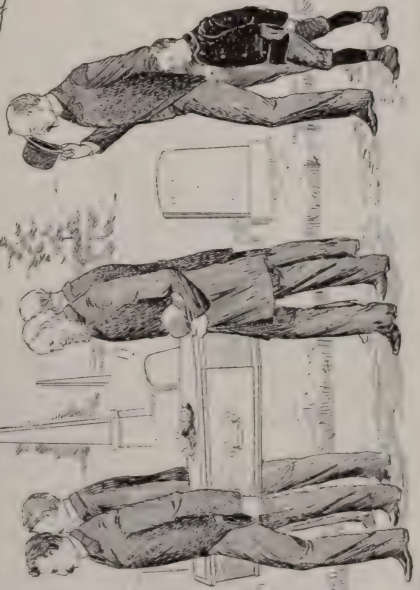


Tom Thin, believing in the medicine that has cured him, determines that his children shall be dosed with the same

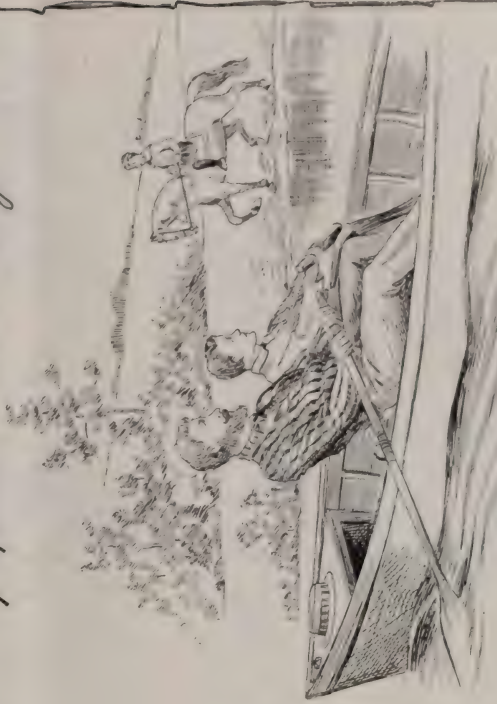


In the year 1840, Diphtheria was terribly prevalent. One Samuel Stout Jr., a rather weakly boy of 15, unable to withstand the ravages of the disease, is followed to the grave by his prematurely aged father and delicate little brother. The friends and relatives all wonder why so many of Stout's children die so young, for they are familiar with the fact that he comes of a long-lived ancestry and they

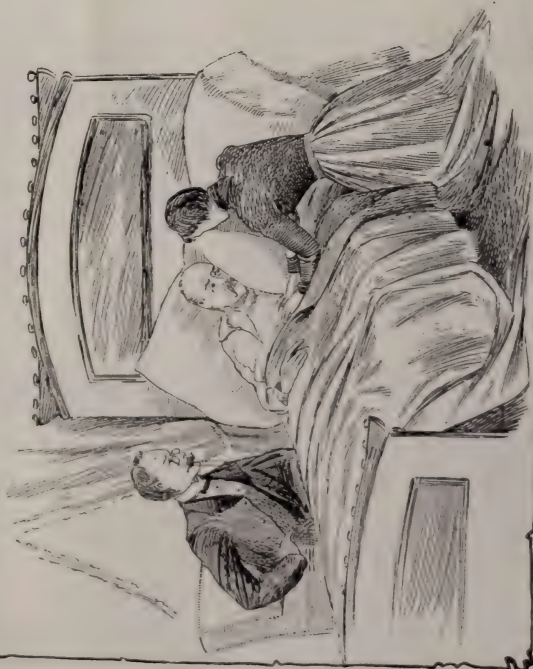
all firmly believe in the potency of hereditaries



By a singular coincidence, on the very day of Master Stout's funeral, Mr. Thomas Thru is celebrating his oldest son's 15th birth-day; and as, glowing with health himself, he looks at his fine, manly, healthy, ruddy son, he concludes that this world is a pretty good place, after all and that "life is thoroughly well worth living"



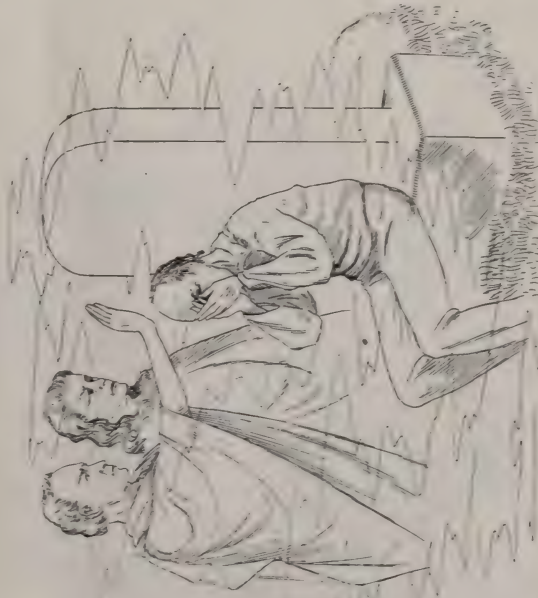
In 1850, at 50 years of age, we find "G", at 50 years of age, we find "Sammy Stout" who inherited at least 90 years of humanity, a physical bankrupt, in the act of making an assignment to—death. On his certificate, the physician says that the cause of death was Consumption, but the Sanitarian whispers "Suicide"



At 50 years of age, we find "Tommy Thin" (now grown Stout) the father of a family who love, cherish and respect him. Christmas Day brings to him truly good—cheer and the spectre of death has no place in his thoughts.



The chidings and reproaches of our nonagenarian grand-parents for the reckless and heedless squandering of that greatest of heritages, a vigorous constitution, may well disturb, even in its grave, the emaciated spirit of the thoughtless Suicide.



Can anything be more pleasant to the healthy man of 60 than the rollicking play and laughter of healthy, hearty grand-children, when he realises that this very health is a blessing which they must attribute directly to him. As the Snow-ball grows in size, as it is rolled, so does this third

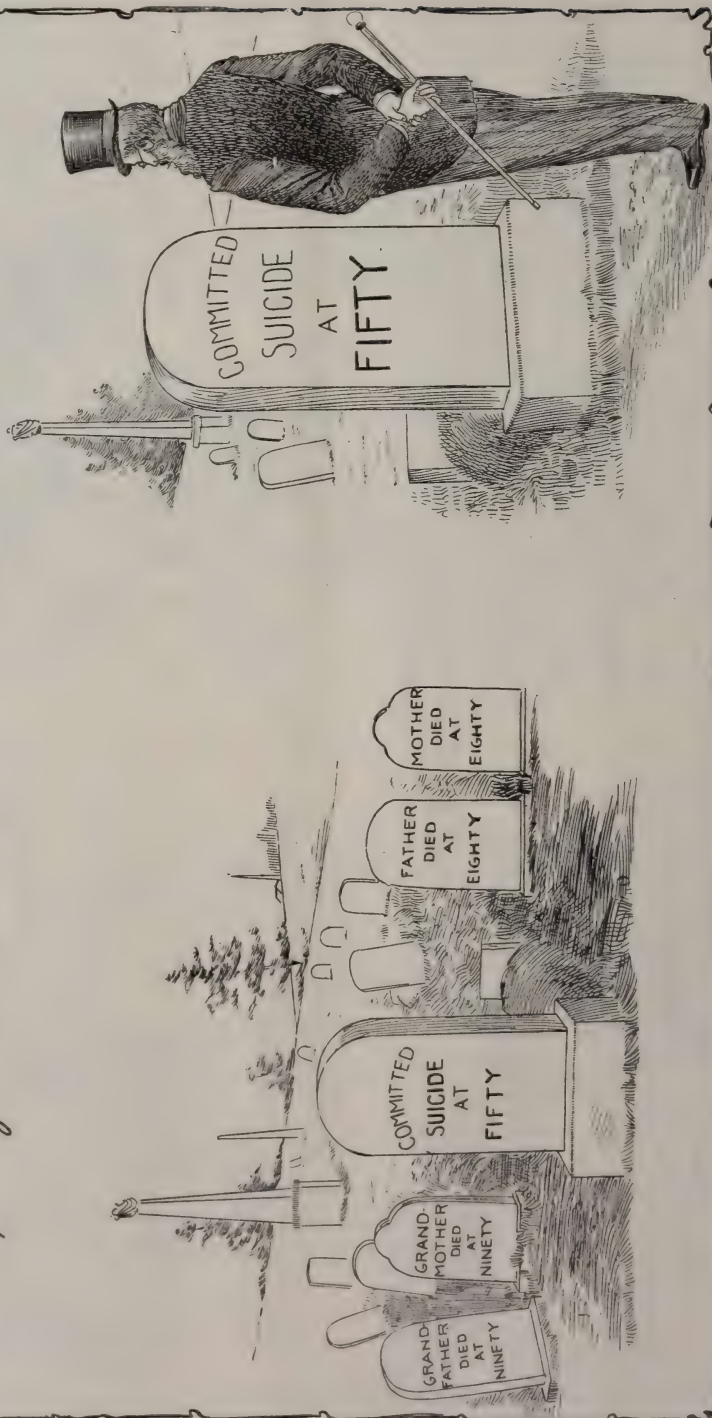


Generation of Stantonian enjoy even greater vigor than the first and the second.

The Silent Tomb-Stones,
that record the history of
the Stout Family, speak
more eloquently than words to

hole

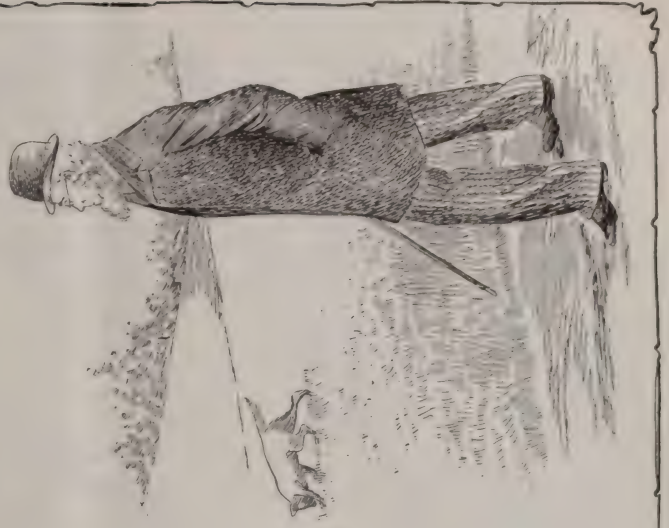
70 year-old Mr. Thin,
heavy as he reflects upon "
what might have been "
and contrasts it with
"what is "



And the surviving children and grand-children of Mr Stout, happily, are ignorant of the real cause for their emaciated and debilitated forms, which their friends, sacrilegiously and insultingly, attribute to the "Will of God," but, as the Doctor



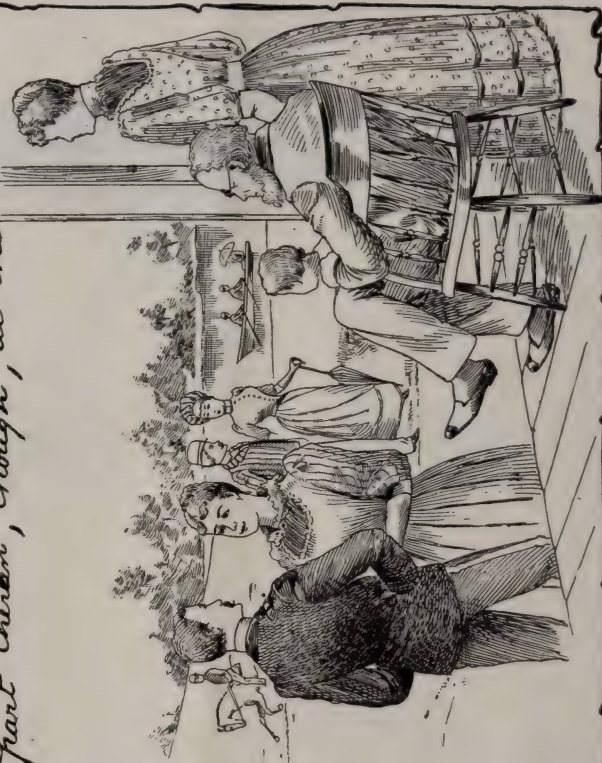
these children, one meets one of his wacks, his Mr's pleasure is, for a moment, clouded when he thinks of the heritage of woe left behind him by his old friend Stout.



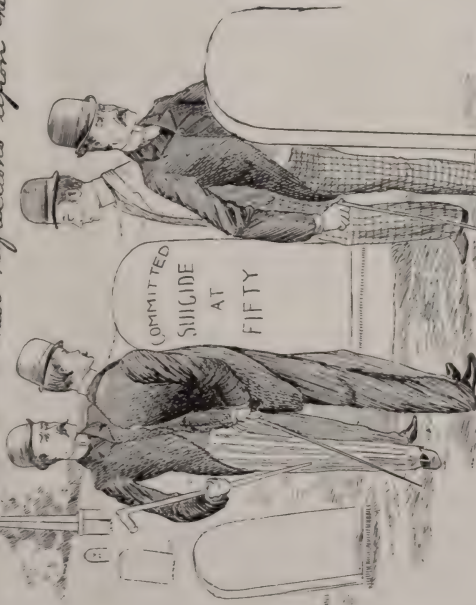
Same time, he is very sure that he is, even yet, physically, more than a match for the combined prowess of Stout, though they may beat him in book-learning.



At 90 years of age, Mr. Thin commences to think that he really must be getting old, for, while all his faculties are nearly as bright as ever he must content himself by watching and directing the sports and pleasures of his off-spring, for, a slightly growing weakness warns him that he can, no longer, take an active part therein, though, at the



In the year 1891, it came to pass that the people commenced to properly comprehend the meaning of the word Hygiene and as 'the miserable, unhealthy, distasteful descendants of our kind, stout becoming familiar with their family history and learning how they had been robbed of their ancestral heritage of vigor and longevity, visit the tomb of the one who had so wronged them, let us draw the veil over their reflections upon their



"He Laughed Best"

our progenitor and turn to the Centenarian, Mr. Thin, daily and peacefully waiting for the natural termination of his humanity and let us learn from his own lips that the laws of hygiene are but the laws of nature and listen to him telling his children and his children's children that his long and happy life is due to the fact that he early learned the laws of nature and obeyed them



"Who Laughed Last"

De Mot.

A Microbic Catastrophe.*

BY MIKE-ROBY.

THE CONSEQUENCES OF TOO MUCH STUDY IN BACTERIOLOGY.

THE car was well filled as we rolled out of the depot at Jersey City, but rapidly thinned out until we reached Elizabeth, beyond which there remained but two passengers beside myself. For some time I remained buried in thought, recalling the scenes of the day and (I must acknowledge it) endeavoring to fix in my memory some of the good things said during the evening, that they might help me out on some future occasion of the same sort. Presently my attention was attracted to two of my fellow passengers, who, by a succession of smothered snorts, and now and then an irrepressible roar of laughter, seemed to have something very funny with which to regale themselves. They appeared to be two dealers from some village in the western part of Pennsylvania, who had been to the metropolis for their semi-annual stock. By degrees I made out the subject of their merriment. It seems that in their vicinity was what they called a tamarack swamp. 'This must be something like a quicksand, for whatever goes into it is swallowed up and is seen no more. Popular tradition considers it a bottomless pit, or at least locates the lower extremity of the swamp in a very hot climate. It has been used by the surrounding country people as a convenient dumping ground for refuse of all sorts from time immemorial. Quite recently a newly-chartered railroad had surveyed its route directly across the swamp, and directed the contractor to fill it up. But this was easier said than done. The engineer made his estimates, and the full quantity of earth was thrown into the swamp, but it was not filled up. Another requisition was made and filled; the gulf yawned hungrily as at the beginning. The track could very easily have been laid around the swamp at no additional expense, but with true corporate obstinacy the company had got its back up, and determined that across that swamp their road must go, and directed the engineers to proceed with the filling until the work was completed. The force upon duty was doubled, and the work pushed ahead with vigor. Several times they thought they had succeeded, and a firm road-bed was formed and track laid, but the next morning it had disappeared beneath the dark waters of the swamp. Five thousand carloads of rubbish had been emptied into the abyss, and the task seemed as far from completion as when first begun. The attention of the whole neighborhood was drawn to this novel contest between the railroad and the tamarack swamp. The result was vastly amusing to the country people, who, as a matter of course, took sides with the swamp against the corporation, and an immense amount of chuckling and self-felicitation took place as their predictions that the bottom of the swamp would never be reached seemed daily more likely to be verified.

* From the *Medical Times and Register*.

My fellow-travelers finally quieted down, and my thoughts recurred to the principal topic of the evening. If the balance created by nature were disturbed, and the process of reproduction allowed to proceed without any obstacle, and the death of the progeny were suspended, how many microbes would there be in a week, and would Allegheny County hold them? At this point, whether lost in the immensity of my conceptions or whether the stimulating effects of the wine had evaporated I know not, but I fell asleep.

How long I had slept I cannot tell, but I was awakened by a sensation of cold. It was some time before I could recollect where I was, and when I did my bewilderment was scarcely lessened. I had fallen asleep in an ordinary parlor-car, but the one which I was in did not resemble it in the least. The richly-upholstered couches and the beautiful woodwork had disappeared. I was lying on a lounge so thickly wrapped in furs that I could scarcely move. My feet were in close proximity to a stove which occupied the centre of the car. Roof, floor and sides were thickly hung with furs, which seemed to press down upon me with smothering force. One small window of thick but beautifully transparent glass remained, and the draught from this seemed to chill the marrow of my bones. Glancing through it I could see that we were going at a fearful rate. Huge, shapeless masses shot by like meteors. The country through which we were passing was a waste of ice and snow. No sign of human life was visible; not a tree or bush enlivened the landscape. Chaotic masses of rock broke through the snowy covering of the plains, but rather added to than detracted from the desolation of the scene. In the distance the majestic forms of great icebergs sailed by, slowly, yet withal swiftly enough to show at what a terrific rate we were travelling. Through all this desolation it was somewhat reassuring to see the moon looking quietly down upon me—looking just as she always did, but brighter than I had ever noticed her before. But—what! Surely I went to sleep in Jersey, and here is the Pole Star almost directly over my head!

While cogitating on what this new phenomenon might signify, the door of the car suddenly flew open, and with a freezing blast in staggered the most singular looking creature. He was a boy about ten years old, but so gaunt and withered that he looked like an old man. He was wrapped in many layers of ragged garments of sombre hues. His head was covered by a tangled mass of uncombed locks, over which was tightly drawn a uniform cap. His grimy face bore the traces of tears, but these had ceased, and his large, dark eyes bore no expression but that of dull despair. He was passing mechanically through the car without seeming to notice me, when, feeling as if my brain would become unsettled if I could not get some conception of what all this meant, I stopped him.

"Who and what are you?" said I. He raised his eyes to me with a momentary gleam of intelligence, and said, in a dull, listless voice, "I am the last newsboy, and here is the last newspaper." And so saying he laid down a paper on my lap and sank down on the floor in front of the fire. I looked at the paper. It was printed on a sheet of common whitey-brown wrapping paper,

and from its general appearance it flashed upon my mind that it was the last despairing work of a man whose hand fell nerveless as the press made its last impression. There were no headings, no advertisements, no paragraphs. It was printed in one continuous form, and in fact looked more like a leaf torn from a book. It read as follows :

"The awful catastrophe which has come upon the world is so singular that even now, when the period of the higher forms of animate nature is about to be completed by their total extinction, we cannot help acknowledging that by no human forethought could the calamity have been avoided. It has been only during the present century that the existence of the minuter forms of life were discovered. Only during the last decade did the improvements in the microscope render the discoveries of Pasteur and Koch possible. And yet, when the scientific world had opened its eyes to the truth, the possibility of this frightful accident was lost in its overwhelming impossibility.

"To recapitulate facts which are now but too well known by all : Among the microbes recently discovered, whose sphere consists in bringing destruction upon higher organisms, the bacterium of glanders stood pre-eminent. It was the smallest of all. It multiplied with amazing rapidity. It gathered new intensity when allowed to work under favorable conditions, acquiring increased vigor with every development of new broods. If a full supply of material for growth could be obtained, and no injurious conditions existed, a single microbe would in two days be represented by two hundred and eighty-one trillions of its kind. But so remote was the chance of such conditions being ever presented that the imagination of Verne never compassed it. Nor would it have been presented had not an illiterate farmer in the West been impelled by sad fate to cast into the tamarack swamp the body of a horse which had died of glanders. So seemingly inconsequential was the act which destroyed the world ! Here was a carcass containing billions of these microbes ; and the swamp afforded a limitless matrix in which they could multiply without a single unfavorable condition. The decaying organic matter which had for ages formed and sunk into the swamp supplied the material for growth.

"The result was quickly manifest. The men who were engaged in constructing a road-bed across the swamp found their labors unexpectedly brought to an end. The swamp was filled at last, the rails laid, and the directors in a special train rode over it in triumph. But that was the only train which ever passed over that fatal swamp. The next one ran off the track, and on examination the road-bed was found to be lifted up a foot above the level. The engineers were blamed and ordered to lower the tracks. But when the workmen came to do this they found the tracks several feet in the air, and in a week a lofty hill uplifted itself upon the site of the unlucky swamp. Nothing daunted, the mulish board ordered their men to tunnel the hill. One day, when an unusually large blast of dynamite had been exploded, the workmen found a new enemy to contend with. From every crack and crevice of the quaking, tottering hill there oozed masses of a singular substance resembling the "mother" of a vinegar barrel. The hill rose higher daily until it overtopped

the neighboring heights. The curious came from all sides to look at the wonder. The mother-like masses poured out until they covered the hill and commenced to descend upon the surrounding farms. People began to grow anxious concerning it, especially when a commission sent by the government announced the true nature of the phenomenon. The hill grew to a mountain, and down every ravine which rent its sides streamed rivers of slimy matter which spread over the plains below. Those who last ventured near enough to view the site of the fateful swamp saw a terrific sight. It was converted into a furious volcano which vomited forth, with momentarily increasing power, masses of vital, living beings, countless tons upon tons of microbes. Every obstacle was overcome in its course. Trees, rocks, rivers served but as food for the relentless creatures, whose powers were so greatly increased by unrestricted development that no object, animate or inanimate, could withstand their destructive attacks. Far and wide the floods of this new deluge rolled their unebbing tides. First the farms in the immediate vicinity were covered; then the whole country; then it rolled down the river, ever spreading, until the whole Ohio valley was overwhelmed. Many hoped that the flood would pour down the Mississippi and be lost in the Gulf. But this outlet was insufficient for the ever-increasing flood, and from every gap in the Alleghenies, nay, over every mountain top, it pours down towards the ocean. Faster and faster it spreads. America is lost. The Atlantic is thick with microbes; the world is gone; and the only question now left for humanity to settle is whether the all-conquering bacillus can withstand the cold of the Poles."

I dropped the paper from my palsied hands. The last traveler on the last train, I was flying North! Hurrying, skurrying, speeding North! Flying at lightning speed! From what? Was I pursued? Above the noise of the flying train I could hear a sullen roar, growing momentarily louder. I looked out at the window at the rear end of the car, and by the light of the setting moon and the stars shining with unearthly brilliancy from the inky sky I could see the southern horizon occupied by a far-reaching yellow wall. Far as the eye could pierce it ran from right to left, towering up and swiftly rolling with thunderous roar, full down upon the fated train.

It speeds along! Faster, faster flies the shrieking train! Nearer, nearer sweeps the terrific deluge! Higher it rears its tawny front! A furious storm of hail and snow arises. Boreas awakes; resents the invasion of his icy realm and all his Arctic hosts he hurls upon the foe! Up! Titans! Niblungs bold, and all ye powers dread whose giant forms loom vast and terrible in the dim northern mists! Briareus, ply thy hundred arms! Thor, wield thy hammer as of old; and all ye heroes in Valhalla's halls, to battle once again! For look, the Destroyer, comes, and the last fell fray is on!

Through the thick hurtling sleet the train with difficulty plows its way. The yellow wall looms up behind us. Torn and rent by the furious blasts, it is tossed into a thousand terrific shapes. Still on it comes. Higher and higher it piles, till half the heavens are blotted out. Demon faces gleam out on every side, and snaky arms fling out and up and down. The howling of the tempest

grows louder as it momentarily checks the onrolling wave, which roars again in wrath, drowning the groans of the laboring train. Once more the foes gather for the onset. They form in one vast mass, piling up mountain high, coming with resistless force. Boreas is beaten back! The train stops. Over our heads the mass impends; it is on the brink of falling. It falls in avalanches, overwhelming us in its billows—the car is crushed—I

“Help! I’m smothering! Hello! Gosh!”

The last exclamation was called forth by a souse of ice water over my devoted head, which effectually recalled my senses to their proper habitat. I found myself floundering on the floor, vainly endeavoring to free myself from the superincumbent weight of an old and obese lady, who was making the welkin ring with her shrill screams. When quiet was restored I found that the aged party, who had boarded the train after I had fallen asleep, had visited the end of the car in search of a glass of ice water. Not finding it she had sent the porter to another car for her drink, and just as he was in the act of handing her the cup a sudden lurch of the car precipitated her upon my devoted form, overwhelming me at once. In her fall she wildly clutched at the porter’s arm, and hence the deluge of ice water upon my head.

However, apologies were duly tendered, damages repaired, and by the time we rolled into the Broad Street depôt the ancient dame and I were firm friends.

After maturely deliberating upon the occurrence I have come to the conclusion that in something I had taken during the evening there was some of the specific bacteria of nightmare.

The Relative Value of Springs and Rivers as Sources of Water Supply.

BY HOWARD MURPHY,

Civil and Hydraulic Engineer, of Philadelphia; Member of the State Board of Health of Pennsylvania.

YOU have submitted to me the following proposition, with the request that I should send a communication to THE ANNALS OF HYGIENE on the subject.

“A city of 10,000 persons is considering the question of securing a supply of water from a spring around which a population is fast collecting, instead of from a large river. Some persons contend that the water from the spring is liable to pollution, while a large stream of water flowing rapidly, exposed to the atmosphere, purifies itself.”

This communication only states a portion of the facts, consequently it is impossible to reach accurate conclusions with regard to this particular case. The large river in question may be simply an open sewer, and even if there is some danger of contamination of the spring, and if it were necessary to decide between the two, the spring might be much the better and safer source of supply.

As no locality is given, and as so many conditions are missing, the question becomes a purely general one, that is, as a general rule is it better to obtain a domestic water supply from a spring the drainage area of which is inhabited, or from an open stream of large volume? In general, from my own experience, and from all that I have read upon this subject, I would prefer the water from the open stream.

I do not, for an instant, condemn the use of springs, under proper conditions, as a water supply. Some of the finest water supplies in the world come from these sources. I have, myself, constructed a water-works, the source of supply of which is a spring discharging about six million gallons per day, and it is altogether the most charming and attractive water supply that I have ever met with in my own professional experience. On the other hand, I at one time probably lost considerable professional work because I recommended the rejection of a spring of large discharge, which issued below a level which was thickly populated. My opinion with regard to that spring has since been corroborated by reliable information to the effect that sawdust has been found in the water issuing from it, and crevices which will admit the passage of sawdust could hardly obstruct the passage of microbes.

Some persons who are justly dissatisfied with the Schuylkill water get their milkmen to bring spring water from their dairy farms for their domestic use. (Pure spring water is always plentiful on dairy farms.) In nine cases out of ten, to speak moderately, it is my opinion that this spring water is more likely to be injurious than the water supplied by the River Schuylkill, as bad as it is. There may be one pump or two. (There are probably two on dairy farms.) One pump is likely to be in, or just outside of, the kitchen, and the kitchen drainage, and that of the generally near at hand cesspool, is more than likely to be percolating into the well. The other pump is generally in, or next to, the barnyard, where all the drainage of the barnyard and stable is constantly percolating through the soil into the well. The springhouse is, of course, down in the low part of the grounds, generally very close to both the dwelling and the barnyard, the whole establishment having been originally located so as to be near the spring, and consequently all of the objectionable drainage of the premises is more than likely to come up in a partially strained and diluted form in the spring.

In my professional business, and on account of my residence at various times during my life, I have had occasion to personally observe much of this sort of thing, and I would like to call attention to one fact. The women of an ordinary farmhouse are rarely the buxom, rosy-cheeked people that we read about in books, and are generally pale and thin, and altogether distressed looking specimens of humanity, and I believe that one of the principal reasons is that their beverage is generally the product of water mixed with barnyard and still more dangerous domestic drainage.

The people of Philadelphia generally complain of the Schuylkill water when it is overloaded with clean country mud, and are satisfied with it when it is clear. I myself have bathed in the Schuylkill when it was at its clearest, at

a point just above the Wissahickon Creek on the Montgomery County side, and after getting into the water have found it to be so offensive that it would have been most agreeable to have taken a shower-bath in clean water, with soap, before dressing.

It is well known that the most dangerous impurities in drinking water are impalpable to sight, smell or taste, and that the sparkle of certain waters indicates a gaseous condition which is evidence of the presence of foreign matter, which may be injurious.

While, as I have said before, I am thoroughly familiar with the desirability of springs as a source of supply in certain localities, as for instance, among the mountains of Virginia, where I have done a great deal of hydraulic work, I do not consider them in general so good as open streams, the drainage areas of which are populated. I do believe in the purifying influences of the oxygen in the atmosphere, and that almost all organic matter will be oxidized and precipitated if sufficiently exposed.

Another advantage of open streams is that in almost all parts of this country their beds are subjected to frequent freshets and are consequently scoured and cleaned of such organic impurities as have been precipitated.

Another advantage of the large open stream is this: Certain organic matter passing into it is far more diluted than in the relatively small spring, and where a drink of water is taken from a very large river, the mathematical chances are very small that this drink will contain any portion of even a large amount of organic matter which may have been placed in the stream far above.

Of course there are ten thousand questions which enter into a matter of this kind. For instance, it makes an immense difference from which portion of the stream, under certain conditions, the water supply is taken. There are certain hydraulic principles which govern the behavior of streams, and depend upon the topography of the country, etc., and the condition is quite possible that water taken from one side of a river may be good, while that taken from the other side may be positively bad. I have observed this condition where there could be no question about it; for instance, where a stream on which iron ore washing is done, emptied into a river. The presence of the water from this stream was plainly evident on account of the positive difference in its color from that of the river. For some distance one side of the river would be entirely clear, and the other densely turbid, and while this was made apparent on account of the difference of color in the waters, the same condition would have existed had typhoid fever germs instead of mud been emptied in by the smaller stream, and the same precaution should have been taken in locating a water supply on that river.

A water works is a structure for which no general design can be made. It is like whitewashing and house-cleaning, it cannot be "taken in" like washing and ironing. No intelligent opinion can be given on a design for a water works without full knowledge of the conditions extant on the ground, and it is therefore impossible to decide in an individual case whether a proposed spring supply would be better or worse than a proposed river supply, but in general it is my positive opinion that a supply from a large stream is better than that from a spring the drainage area of which is closely populated. O

course the geology of the neighborhood has much to do with this question, so far as the spring is concerned. I regard a limestone region as a most dangerous source of a spring supply, because, as limestone is a soluble rock, it is constantly subjected to the increasing formation of caverns and crevices through which liquids of any kind are more than liable to pass to the natural outlet, and my opinion on the subject of the conditions extant in limestone regions is based upon very positive experience.

You are entirely at liberty to publish this communication if you so desire, although urgent engagements have prevented me from placing it in better shape, but I am more than sure that the statements which I have made are founded on physical and other facts.

[The query, to which the above communication is published as a reply, was sent to us anonymously and we would ask the writer therefore to oblige us by revealing his identity. We would have it distinctly understood that, hereafter, we will pay no attention to *anonymous* communications, though we will stand always ready to cheerfully reply to all queries bearing the name and address of the inquirer.

ED. A. OF H.]

Twice-Told Nursery Tales.

BY DR. HERSEL FISHER,

Professor of Hygiene and Public Health, National Normal University, Iowa.

IN recounting some of the accidents that befall the babies through the ignorance or carelessness of parents and nurses, mention must be made of a class of cases that are met with in the practice of almost every physician of wide experience, about which he will talk to you freely enough in a general way, but will not give names except in the strictest professional secrecy, and not then unless there is good reason for so doing.

I refer to the murderous practice of dosing the innocents with powerful patent nostrums, the composition, effects and antidotes for which are unknown to the persons who administer them. My one-time neighbor, Dr. Z., is a bluff, plain spoken German practitioner, who tells the truth whether it be welcome or not.

"Will my darling get well, doctor? please say yes," cried a young mother to the old physician as they stood beside her child's cradle watching its life fade out.

"No; she will not."

"Oh! what can be the matter with her, doctor? She was so well this morning and now she is dying. Is there no God of mercy? Why is He robbing me of my child?"

"God has nothing do to with it; you have killed her yourself. I told you not to use that abominable cough syrup (mentioning one of the most widely advertised mixtures on the market); it owes all its efficiency to the opium it contains, and you have simply drugged her to death with it."

* Abstract of a paper in *Babyhood*.

Plain words, but true. It was the third case he had been called to treat, and he had grown tired of remonstrating against the use of such things. She had poured the medicine down the child's throat because some one had told her it was excellent to quiet fretful children and put them to sleep. Children do not bear opium well, and it should never be administered to them by any one but a well-informed physician who can watch its action.

The soothing syrups are another fruitful source of infantile mortality, and many fatal cases of poisoning following their use might be cited.

The records of the health offices contain many certificates of death that are false, and the physicians who made them knew they were when they made them, for there are few men who speak as plainly as Dr. Z. They do not care to put it on record that the children in the families they serve have been killed by criminal carelessness and ignorance. Pain killers, cough medicines and soothing syrups do not appear as the cause of death nearly as often as they should.

What shall I say of that other class of mothers who will not take care of their children, but kill them by refusing to do their known duty to them?

"He is starving, that is all that troubles your child," I have had occasion to say more than once.

"We give him plenty of milk and infant's food; he certainly has enough nourishment."

"Why do you not give him the food nature intended him to have? You are weaning a three weeks' old babe!"

"Oh! I cannot think of nursing him. Why! would you have me shut myself up in the nursery and stay all winter? Society makes so many calls on me that I cannot take care of him myself."

The poor neglected child grows thinner and thinner, until suddenly a bowel complaint seizes it and in a few hours it is dead—starved to death.

Such mothers get no sympathy from their medical advisers and deserve none.

The story of the physician being called to see a sick child who had been crying with pain for hours, to find that the cause of all its trouble was a pin that had been driven under the skin in dressing, and remained there, has been repeated to the point of staleness, but unfortunately it remains ever new.

Quite frequent, almost daily in the spring and autumn, are calls to see fretting, irritable children, who cry continually and cannot be quieted for any length of time. The natural inference is that they are in pain, and the physician is summoned. He finds them sweating under enough clothing to make an adult miserable, and the perspiration that pours out of them, souring and scalding the tender skin about the neck and gluteal region. The removal of a part of their clothing and a few cold sponge baths soon cure them.

Negligent nurses are very fond of the starch bag and powder puff, both valuable within limits, and push their use to a point where it becomes abuse. Finely powered starch, dusted lightly over the surface of the body after a bath, is comforting to the little sufferers from heat, but it should never be used unless it can be closely watched and washed off as soon as it is saturated with mois-

ture, for it soon becomes sodden and then ferments, and with the sour perspiration macerates and destroys the outer layer of the skin and makes the patient miserable. The lazy nurse likes it, because she can save the labor of drying all the folds of the skin with the towel by dusting it on thick enough, as it will absorb the moisture, but in a short time her starch is in a ferment and the baby crying with pain. It should never be used in lieu of a towel.

Cradles are relics of a darker age and should never be allowed in the nursery, for if they are used once the child will require them ever afterward. It is as easy to get along without them as with them, and the same may be said of the habit of walking the floor with children. It is a bad habit and should not be begun. A friend was complaining to me one day that he had not slept the night before, because the baby would sleep only when he was carrying it. He said it required the united efforts of himself, wife and maid to care for it. That afternoon I took him through the children's ward in the hospital where one nurse cared for twenty sick babies, and we did not hear a cry while we were there. She never carried one to quiet it, and there was not a cradle or a rocking chair in the ward. When they became fretful, she tried to discover the cause and remedy for it, but never resorted to soothing syrups and tramping the floor with children in her arms.

"One is too many for three of us," he said to her, "how do you manage twenty."

"The trouble is one manages three of you, I manage the twenty. Babies are great despots when they get the mastery, as they usually do. Had you begun with yours by seeing that it was made as comfortable as possible, and never attempted to soothe its anger or ease pain by rocking and carrying it, you would have had no trouble. Common sense is a great thing in the nursery."

The Causes of Bad Breath.

BY FRANK WOODBURY, A.M., M.D.,

Fellow of the College of Physicians of Philadelphia; Chairman Section of Materia Medica and Pharmacy of the American Medical Association; Honorary Professor of Clinical Medicine in the Medico-Chirurgical College of Philadelphia.

BAD BREATH, or halitosis, from a medical standpoint is usually considered of very slight importance. When we regard it from the personal aspect, however, it becomes of much greater consequence. It may even result in severing social ties and in condemning its unfortunate possessor to retire to temporary seclusion or permanent banishment from genteel society. And yet we may search in vain in our works on practice of medicine for any information concerning its causes or its remedial agents. It may be mentioned incidentally as a symptom, but never more. Our fathers dignified it with the euphonious title of "Catostomatosphresia," which silences criticism, but throws no light upon use or cure.

Among the conditions most commonly credited with giving rise to an offensive breath are collections of bad-smelling materials in the air-passages, or a disordered state of the digestive organs. It is easily understood that an offensive catarrh of the nose would give rise to offensive exhalations, and the remedy for such a state of affairs suggests itself in the removal of such offensive collections with the aid of a syringe, or a surgeon, and the use of disinfectant sprays or douches. In a similar way, when we can trace the source of the odor to decayed teeth, the skill of the dentist and the frequent employment of mouth-wash and tooth-brush will correct the bad odor. Sometimes the tonsils become enlarged and their follicles filled with cheesy plugs of unusually disgusting smell; and when an abscess forms in the tonsil the odor of the pus may be so offensive as to be beyond comparison. Here also the cause and the remedy are at hand. When along the course of the bronchial tubes the secretions of the mucous membrane become thickened and are not promptly expectorated, they accumulate and undergo putrefactive changes and cause offensive breath; frequently, owing to dilatation of the bronchial tubes, pouches are formed which contain this decomposing material. In such cases the steam atomizer comes into play with sprays of eucalyptol, salicylic acid, or creolin, together with pulmonary gymnastics to prevent such accumulations from occurring. In a similar manner the existence of foul breath in cases of ulceration, gangrene or cancer of the lungs is explainable; and although the cause may not admit of removal, still much may be done to mitigate the symptoms and remove the offensiveness of the expiration. Therefore, in a large group of cases, the cause of foul breath can be found, if sought for, in local disorders of the nose, throat, mouth, bronchial tubes, or lung, and by removing offensive secretions and treating the local affection, the offensive character of the breath may be made to disappear. In such cases much benefit will result from antiseptic washes, gargles, douches and sprays.

But there are other cases that do not admit of such explanation, and will not yield to local measures. Here we can trace the source of the odor to the blood, for the expired air contains, in addition to carbonic acid, considerable watery vapor, which is not pure water, but holds organic and odorous particles in solution and suspension—all derived from the blood. For instance, if a volatile substance like thymol, or eucalyptol, be injected under the skin anywhere upon the surface of the body, it becomes evident very shortly in the breath. In fact, very many medicinal agents find their way out of the body through the bronchial mucous membrane, and in this way exert a local effect upon this membrane. Terebinthinate preparations, asafetida, alcohol, chloral, ether, chloroform and many others may be recognized in the expired air. Moreover, some medicines, while not themselves appearing in the expired air, yet have the power of affecting it; for instance, mercury, tellurium, antimony, arsenic, lead, sulphur and phosphorus. Some diseases alter the blood in such a way as to produce a characteristic odor in the expired breath. In diabetes, for instance, the breath smells of fresh apples, honey or hay. In pyæmia, also, the breath acquires a characteristic odor, and in uræmia it is sometimes ammoniacal.

During the existence of fever the breath is altered, and this forms a familiar diagnostic sign, especially in young children. In dyspepsia and various disordered conditions of the digestive organs and their contents, especially owing to the presence of putrefactive ferments, gases are formed, containing sulphur, which are absorbed by the blood and escape from the bronchial mucous membrane. This is the most common explanation of temporary bad breath, and is removable with the aid of cathartics, and especially small doses of mercurials, which tend to produce an antiseptic condition of the alimentary canal. Certain articles of food, such as asparagus, onions, or celery, have volatile, odorous principles, which diffuse readily into the blood and affect the breath. This explains why it is impossible to entirely overcome or disguise the fact of the indulgence in leeks or garlic by the use of aromatic mouth washes or peppermint lozenges.

From the fact that, like other mammalian blood, human blood possesses a characteristic odor, so that the smell of fresh blood may be recognized although it can not be described, it is natural that the expired air should also be odorous to a greater or less degree. At times when the blood is unusually rich in volatile fatty acids (butyric, caproic, etc.), it would be expected that the breath, the perspiration and other secretions should announce the fact by an unusually strong animal smell. What is more difficult to explain is how mental states and emotions can be capable of affecting the odor of the expired breath, and still more how unusual odors can thus be caused. For instance, it has been noticed that under certain conditions of excitement the breath has assumed the odor of pineapples, and a fetid breath may be caused by anger or other strong emotions. In some individuals the heavy odor of the breath is characteristic, and can not be entirely overcome by any means at our command. In the great majority of cases, however, it is due to accidental causes or to local disorders which admit of ready removal and complete relief. Where the animal odor is present in all the secretions, frequent bathing, life in the open air, the use of plain food, with plenty of fruit and very little meat or eggs, will greatly reduce the objectionable characteristic, and in such cases the use of a little perfume in the bath, such as Florida water or scented soap, is pardonable, and may be regarded as a concession to the comfort of those around. Even strong peppermint lozenges might be forgiven where a very offensive breath is in question, although well-bred people generally prefer not to have their presence announced by any powerful odor, be it good or bad.

The Relation of Diet to Personal Beauty.*

BY JOHN V. SHOEMAKER, A. M., M. D.,

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Medico-Chirurgical College of Philadelphia.

THOMAS CARLYLE, a mighty thinker, but a man of perverse moods and a chronic dyspeptic, wrote admiringly of an ideal "eupeptic" man as one who

* From *The Dietetic Gazette*.

was brave, dutiful and dominant. From the depths of his unhappy experience, a victim to "the vile hag, Dyspepsia," the rugged Scotchman perceived the immense advantage which (other things being equal) the man of good digestion possesses in the battle of life. Carlyle's hero is emphatically a strong man; but viewing him from another standpoint, we may also be permitted to affirm that he is a handsome man. This statement may seem to be made in the spirit of the time-honored adage, "handsome is that handsome does." It admits, however, of a ready explanation. For in what does personal beauty consist? What are its chief elements? We are not able, it may be said, to add to or to take from our stature, we cannot alter the contour of head and face, and cannot train features to beauty of form. These objections are perfectly valid. At this period of the world's history, after the great fusion of races, or, at least, tribes, which has taken place in Europe, we cannot expect to find the ideal purity of features which distinguished the nations of classical antiquity and especially the Greeks. Perfect regularity of features, or facial beauty, from an absolutely artistic point of view, we do not look for, scarcely even desire in men. That which adorns man is the stamp of intellect and strength set upon his face. Beauty in the male chiefly consists in a well-developed form and an expressive countenance. Functionally active facial muscles perpetually responding to the impulses of an active mind give interest, variety and, in a sense, beauty, to features otherwise of an ordinary type. That intellectual pursuits bestow dignity and distinction upon the human countenance is a fact noticed in an Egyptian poem of the XIIth Dynasty, written, perhaps, 2,000 years B. C.

But when we speak of personal beauty it is especially of woman that we think. In woman a rounded outline, grace of movement, delicacy and regularity of features, fairness of skin, gloss and luxuriance of hair, carry beauty to perfection. Yet even in the "fair sex," *par excellence*, the charmed beholder seldom pauses, or cares to pause, to criticize the form of features animated with ever-varying expression. Our highest admiration is not given to the

. . . . "cold and clear-cut face, as I found when her carriage past,
Perfectly beautiful: let it be granted her: where is the fault?
All that I saw (for her eyes were downcast, not to be seen)
Faultily faultless, icily regular, splendidly null,
Dead perfection, no more;"

but to the face instinct with love, mirth and vivacity. Beauty resides in the pure skin, sparkling eye, healthy bloom, pearly teeth, ripe and smiling lips, a refined, mobile and intellectual expression. And these are not fortuitous possessions. Disregarding for the present the influence of heredity, we may confidently assert that the essential attributes of beauty depend to a very great extent upon proper food or, more strictly, upon proper digestion. For, as I have elsewhere pointed out,* food, though abundant and nutritious, may be so poorly prepared that the appetite is not excited, the palate pleased, or digestion thoroughly performed.

* Heredity, Health and Personal Beauty. By John V. Shoemaker, A. M., M. D. Philadelphia and London: F. A. Davis, 1890.

Perfect development depends upon perfect nutrition. It is certain that nutrition cannot be perfect unless the digestive apparatus properly performs its functions. If the normal proportion of acid and ferment be disturbed in the gastric juice, or if the liver, pancreas or intestinal glands are deranged, if inactive kidneys and constipated bowels check the elimination of deleterious bye-products, the skin loses its softness and the complexion becomes dull. The beautiful violet tinge of the eye gives place to a muddy hue, the flashing eye grows dull and heavy. The fatty tissue of the face wastes, the features grow thin and wrinkles appear. The hair is liable to become dull and thin and the teeth to decay. The angles of the mouth droop, and a haggard, anxious glance replaces the frank aspect of health. Irregularity of features which was scarcely noticed when the eye was bright and sparkling, the skin pure and the complexion brilliant, now becomes painfully apparent.

It is doubtless true that woman is not to be prized solely for her beauty. Nevertheless, her beauty must always be a magnetic charm and is justly regarded by herself as a valued possession. Our American women are apt to fade easily because they neglect the laws of health. Women as well as men participate in and are injured by the keen competition and ambitious struggles of our social and commercial life. Among the wealthy the whirl of society, late hours, rich food, and neglect of physical exercise, breed indigestion and its attendant ills, and art is called upon in vain to repair or cancel ravages due to defiance of natural laws. In the poor or the middle classes coarse, insufficient or badly cooked food, eaten hastily, without appetite and with an anxious, preoccupied mind, transform the pretty bride, all too soon, into the thin, plain, jaded mother and household drudge. Good food, well-prepared, eaten leisurely and properly digested, preserves cheerfulness, a pleasant interest in the affairs of life, health and, what is by no means least deserving of our consideration, personal beauty.

Is it Lawful to Remove a Patient, Suffering with a Contagious Disease, from His Home, without His Consent?

BY HON. M. RUSSELL THAYER,

President Judge of the Court of Common Pleas of the County of Philadelphia.

IN reply to your note of January 8, 1891, enclosing a slip from the *Dietetic Gazette*, in which it is stated that I have decided that the Health powers have no authority to remove a person sick with contagious disease from his home, without his consent, permit me to say that the statement therein made, while in the main correct, is not quite accurate. The case referred to by the *Gazette*, and which was tried before me, was an action against the City of Philadelphia, by a patient who had been taken to the Municipal Hospital, to recover damages for the alleged negligence of the physicians in charge there. The case was a rather singular one. When the plaintiff was brought to the hospital he was

supposed to have smallpox, and was put into the smallpox ward. It was afterward discovered that he had measles and not smallpox. He was removed after a few days from the smallpox ward to another part of the Hospital. The measles ran their course and the patient got well, but while convalescing was taken ill with real smallpox. It was a severe case, and the disease left him in a very bad condition. His general health and capacity were greatly impaired. He sued the city for the negligence of the hospital doctors in making a mistaken diagnosis of his disease, and putting him into a smallpox ward, whereby he had contracted that disease. The plaintiff was nonsuited by the Court on the ground that the city was not responsible for the mistakes or negligence of the physicians employed at the Municipal Hospital.

In the course of the trial the question arose incidentally whether the Board of Health had any power by law to remove a smallpox patient, or any other patient having a contagious disease, to the Municipal Hospital, against his will and without his consent. The Judge who presided at the trial was of the opinion on that point that the only power which the Board of Health had in the premises was the qualified power conferred upon them by the Pennsylvania Act of 29th January, 1818, which was the original Act establishing a health office in the city of Philadelphia. Those who are curious about its provisions will find the Act in Vol. 7, of Bioren's edition of the Laws of Pennsylvania, page 5. This Act, among other things, provided for the erection of a Municipal Hospital. The 22d section of the Act contained the following provision :

"All persons who shall be afflicted with any pestilential or contagious disease may, upon the advice and order of any physician, or person authorized by the Board of Health to grant such order, be removed by the health officer, and such assistance as he shall for that purpose employ, to the said public hospital, or to such other place as the physician or Board of Health shall approve, *if the person afflicted with any contagious or pestilential disease cannot be properly or sufficiently attended at home*, there to be lodged, nursed and maintained and kept until duly discharged by a permit in writing, signed by a physician of the said public hospital."

No such power as this existed at common law in any person or body of persons whatever, nor does any such power exist anywhere now in Pennsylvania except under and by virtue of this Act of 1818. The power conferred, it is to be observed, is only a qualified or conditional power, the condition being that the person afflicted with the contagious disease "cannot be properly and sufficiently attended at home." It is only in such a case that the Board of Health would have any warrant for removing any person. If it be asked who is to be the judge of whether the necessary condition exists, viz., whether the person concerned "can be properly and sufficiently attended at home," the answer is, the Board of Health in the first instance, but the courts of justice ultimately. If the Board of Health should persist in removing a person who could be properly and sufficiently attended at home, all persons concerned in the removal in any way would be liable, in an action of trespass, to damages which the aggrieved party might recover against them for their unwarrantable proceeding.

The party sought to be so unlawfully removed might also be relieved before the removal is consummated by writ of habeas corpus, or the persons engaged in the removal might be bound over for an assault and battery, or for a breach of the peace. Over and above all this, too, is the question of the constitutionality of the provision relative to forcible removals in the Act of 1818, even in its qualified form, for the question yet remains to be decided whether such forcible removal, although for so important a purpose as the preservation of the public health, would not be a violation of the Fourth Amendment to the Constitution of the United States, and Article 1, of the Constitution of Pennsylvania, which provides that "the right of the people *to be secure in their persons, houses, papers and effects against unreasonable searches and seizures shall not be violated.*"

On the whole, it must be apparent that the forcible removal to a hospital of a person afflicted with a contagious disease, against his will, and in the face of an assertion on his part that "he can be properly and sufficiently attended to at home," would be a proceeding attended, to say the least, with dangerous consequences to all persons concerned in it.

No case has come to my knowledge in which the Board of Health has ever done this. In the case tried before me, already referred to, the evidence was that the patient acquiesced in the advice of the physician, and was carried to the hospital with his own free will and consent.

1824 Pine St., Philadelphia, January 21, 1892.

Marriage as a Remedy.*

AN old man, who had been an eminent physician and teacher, remarked that no act of his life gave him more regret than his counsel to a wealthy, dissolute inebriate to marry. The result of that marriage was nine children. One was an epileptic, one was insane, two more feeble-minded, hysterical and very irregular persons. Two drank to excess, one of whom was a petty criminal. Three other children of this family died in infancy. Of the three grandchildren not one seemed to have average vigor or mental capacity. He remarked that the misery and suffering which came from this error of counsel would at last end in the final extinction of the family.

In another instance an equally able physician, after years of unsuccessful treatment of a feeble-minded, unstable, hysterical young woman, advised marriage. Insanity, inebriety and epilepsy were pronounced family diseases in her ancestors. Her marriage with a neurotic man resulted in six children, two of them dying in infancy, one is in the reform school, a thief and alcoholic; the fourth was married to a low Italian at fifteen, and is an impulsive, strange woman; the fifth became insane at fifteen and suicidal; the last and youngest has fits or periods of unconsciousness from any strain or excitement. These are not phenomenal cases, and are not uncommon in every community. They are presented to bring out the fact of the exceeding danger of thoughtless counsel

*From the *Journal of the American Medical Association*.

to marry, to neurotics and persons who are markedly degenerate and have strong hereditary taints.

In a recent lecture by Dr. Strahan, before the Medico-Psychological Association of England, "On the Propagation of Insanity and Allied Neuroses," he urges that one of the most prominent causes of the increase of insanity and nervous diseases comes from marriage. He mentions the great difficulty in ascertaining the facts, because of the tendency to conceal family history in all cases; yet, notwithstanding all the falsehoods of relatives, the English Lunacy Commissioners were able to trace 25 per cent. of all the insane to this cause. From 25 to 90 per cent. of all insane are said to come from heredity. These are the two extreme figures of eminent authorities who have examined this subject. Beyond all questions of possible dispute, numerous and well-sustained facts show the hereditary transmission of disease and diseased tendencies and the degeneration which comes from marriage of defective ancestors. Nothing can be more serious and reprehensible than medical advice to marry, or consent to the union of defectives, of the results of which there can be no question. The unstable neurotic man or woman, the inebriate, the eccentric, the evident weak and degenerate, rarely ever in any possible way become stronger by marriage. The danger of propagation of all their defects and diseases is so pronounced and certain that the experiment is hazardous in the extreme.

Our present knowledge of the causes of nervous disease sustain this statement fully. There is no restriction of marriage to-day, except in the pronounced idiotic and raving maniac. No one is so diseased or deformed, or crippled, or defective in mind or morals, but may marry and become a parent of degenerate, helpless children, as far as the law is concerned. While this is a sad reflection on the intelligence and civilization of to-day, it reveals a field of reform which medical men, of all others, should occupy at once. All medical writers are unanimous in condemning marriages between defective and disordered persons, and yet public sentiment would not sustain to-day any special laws of restriction. Obviously this is one of the great fields of prevention of disease that both medical men and legislators will occupy in the near future.

To-day all advance in this direction comes from those who breed animals for various purposes. Here a knowledge and application of a vast range of facts produce certain anticipated results, which could be obtained with the human family with equal certainty. The duty of medical men, irrespective of all public opinion, is to teach the doctrine of heredity—not only of any special form of disease, but the transmission of defects, and of lowered vitality and particular tendencies or taints that cripple and disable the coming generation; to teach the laws of propagation, and thus prevent disease at the beginning and cut short the terrible process of nature that hurries the victim down the road of misery and sorrow to final extinction.

Never counsel marriage as a remedy or means of relief for neurotics or persons of defective heredity. Elevate and dignify marriage as a means to raise the race in every way from its childhood age. Although *Utopia* is far away, there are evident signs of progress toward it, and when marriage becomes a subject of strict legislation a long forward stride will be taken.

The Moral Influence of Deceit in House Architecture.

BY CARRIE V. CADWALLADER,
Of Philadelphia.

IT HAS become a painfully evident fact that we, as a people, are sacrificing the essential features of true architecture, the forming of a true artistic taste, health, comfort, and a respect for the truth, all to gratify the constant demand for things quickly and cheaply done. If we countenance an evil we become necessarily partakers in it; so, if we admire the deceit and inferiority of a degraded art, we cannot wholly throw the blame upon the artist.

To gratify a false taste, imitation and adulteration have entered into every department of public demand and supply. The ever-increasing population of our city has kept the builder continually at work constructing row upon row of dwelling-houses, which, in many cases, are thrown together in a most careless and hurried fashion and built of the cheapest possible materials, all for show, no thought having been given to the health of the occupants.

Over this weak, flimzy foundation is thrown the glare and tinsel of bright wall-paper, colored glass windows, and you all know the rest of the long list of attractions in the beautiful shells.

Soon the occupants find, to their cost, that these lovely counterfeits are not the most comfortable or healthful for practical every-day life; the wood has not been properly seasoned, and during the wet weather the doors swell and can scarcely be closed. Poor plumbing! O, what a tale of woe is told in those words. Many can, to their sorrow, supply the kindred grievances experienced in these beautiful little houses, which seem to be built almost by magic, so quickly do they spring up.

When it was necessary for the early settlers to have cheap dwellings, they built log cabins and thatched them with straw. We may use as cheap material as we like to substantially serve the purpose, but the harm lies in making it appear to be something different from what it is.

Pine wood has many beauties, but we rob it of its dignity by making it pass for oak. The great wrong in this system of deception lies not alone in the physical inconvenience and misery which it occasions, but in its influence upon the morals, especially of the young. What a victory to be achieved by the boy and girl when they can so imitate something real as to be able to deceive their elders. The practice follows them through life in all of their occupations, until a habit of deception, and disregard for physical laws and obligations, makes physical and moral wrecks.

Gradually the purely moral tone declines, the monster deceit, and that brood of evils, physical sins, "seen too oft, familiar with *their* face," the fine perception and innate love of truth have yielded place, "we first endure, then pity, then embrace." I hope that I will not be termed a visionary when I claim that a long train of attendant evils are the inevitable result of the daily silent preaching of the architecture and surroundings of the home. As in the bright glare of

the wallpaper the boy sees nothing but beautiful colors dashed together to fill up space, so in the imitation he sees only the cleverness and ingenuity of the artist. Were our own demands inclined more towards quality than effect, perhaps we would not then see what is so familiar to a lover of children, boys and girls standing and admiring the most repulsive circus and theatre bills. The children may acquire a taste for true art by simple home means, and by being taken to the many public galleries. They need to be told why one painting is superior to another, and why the architecture of one nation ranks far above that of another. Many times it is difficult to gain their attention to something beautifully simple, but did we go back to the home we would there see that the house was built and decorated mainly for show. If the people would only be led to see the real ugliness in these houses, they would soon pass out of fashion; if they could but realize the miserable, unhealthy lives which are generated, they would make closer sanitary investigation. Ruskin spent his life in crying against this system of deception from a moral standpoint, and certainly from a physical standpoint the cause is worthy of many earnest champions.

Slaughter Shops.

BY R. HARVEY REED, M.D.,

Health Office of Mansfield, Ohio.

ONE of the omnipresent associates of slaughter houses is a pen of hogs which are feasted on the blood, intestines and other offal, which constitute their chief diet, and on which they live, grow and are fattened.

Just imagine the flavor of pork fattened on the offal of a butcher shop, whose daily drink is blood, and whose diet is the entrails of their slaughtered companions.

You would all "gag" at the idea of eating dog meat, but will you tell me how much better in point of cleanliness and purity a hog is which is fattened on the poorest and foulest class of flesh imaginable, than the carnivora, whose nature it is to live on meat. Is it any wonder Germany has excluded the American hog from their markets? We are not here to condemn the hog that is fattened on corn, and fares sumptuously on pure water every day, but the hog that quenches his thirst with blood and is fattened on spoiled meat and intestines is not fit for the use of man as an article of diet, in the humble opinion of the writer

A huge pile of bones is another fragrant associate of the slaughter houses with all their delicate and penetrating odors; while, as a rule, the floors of these houses are open and the blood, bloody water and other organic juices trickle down between the flooring and saturate the soil beneath, which in turn becomes one seething mass of putrefying corruption, filled with offensive and obnoxious odors. Frequently we find baskets and boxes filled with spoiled hams, shoulders, side meat and other decaying flesh ornamenting different parts of the slaughter house to aid in keeping up the fragrance of the room.

Now imagine a hog pen with all its natural odors, to which is added the fragrance of decomposing blood and flesh on one side, a pile of odoriferous bones on the other, and the soil underneath seething with putrefying organic matter, and the room itself ornamented with decaying meat, and then imagine such a place to kill and cool the animals from which you obtain your choice roasts and tender steaks, which must hang for hours in this fragrant atmosphere while cooling or waiting transportation to the city, and you have a faint picture of the average butcher shop of the average city, and the atmosphere our meat enjoys prior to its journey to the frying pan.

Its transportation from the slaughter house to the meat market is no less romantic: here it is dumped into a dirty, filthy, greasy, bloody, besmeared, stinking wagon box and covered with a dirty cloth that the meanest man in town would scorn to use as a horse blanket for the worst "crowbait" in the city; which is covered with blood and dirt; smells like carrion and is little better; but is plenty good enough to cover the tender mutton or stall-fed beef on its way from the slaughter house to the market.

Now, ladies and gentlemen, if you don't believe this and think I am over-drawing the picture, go and see for yourselves, don't take my word for it, and I will guarantee that you will come back and say to me, "The half has not yet been told."

Beeves are shot in the country and hauled for hours in a wagon in the hot weather until I have seen them bloated up like a drum, before they reach the slaughter houses and are dressed. Does any one imagine that adds to their delicacy or improves their flavor?

Under the present management of our butcher shops who knows what kind of animals are killed and supplied to our meat markets? Have we any guarantee that diseased hogs or cancerous beeves and consumptive sheep are not occasionally killed and sold to our people?

We know of two instances where certain parties tried to sell cancerous beef in this city, but were frustrated in their ends by the vigilance of our sanitary policeman. I know that consumption has existed among some of the flocks of sheep in our county. Who knows how many more such cases existed in the county or how many of them were rushed into the market and sold to our people as "spring lamb." I have seen scores and scores of sheep-livers from sheep that were slain for our markets literally covered with tubercles, and yet the mutton was sold just the same as though it came from the healthiest wether in the State of Ohio.

Who knows how many choleraied chickens and turkeys have found their way into our markets and been eaten by our people? The common "pudding meat" of our shops has an interesting history, surrounded with fragrance and tainted with romance. This delicate luxury is the child of the shop-soured scraps that have become unsalable, which are cooked up with, and not infrequently, the calves and sheep heads (the two latter with the brains and eyes also), until the bones can be shook out of them, when they are picked out and the meat is ground up and seasoned highly, so as to cover any tainted flavor i

may have, and is then stuffed in skins, when it is ready for sale, and in this way an unpalatable, unmarketable batch of meat is made salable. Bologna sausage may be said to be just a grade above the former, but likewise is composed of shop-soured meat, mixed with "blue meat," *i.e.*, old cows and the like that are too poor and tough to place on the market in any other shape.

When an accumulation of this is gathered up it is not unfrequently sent to a foundry, where it is ground by steam in an old dirty, fly-covered cutting box, all gummed up with dried blood, fibrin and meat juices, whose fragrance is enough to entice the buzzards for miles around, but which is little better than some of the meat that is sent there to be ground; after this the meat pulp is highly seasoned; a little smoked bacon is sometimes cut up with it to give it a palatable flavor, when the whole mass is thoroughly mixed and stuffed in skins, smoked a little and placed on the market.

The average butcher sausage shares practically the same fate, and is usually made from stale pork and seasoned with sage and other condiments to cover its tainted taste and give it a degree of palatability.

Some of the firms have their own machinery and cut, mix and stuff their own pudding, bologna and sausage, but that is no guarantee that its quality is greatly improved thereby, except that it is not quite so public, and in some instances the machinery is kept more cleanly. They, no doubt, think where ignorance is bliss it is folly to be wise, on the part of the general public.

Those of us who were raised on the farm and enjoyed the rare luxury of cleaning hog "skins" on butchering day can recall to memory this tedious process, which requires hours of diligent work, scraping each "skin" with a hickory scraper on a smooth oak shingle, inch by inch, until it would pass muster when "blowed up" by our mothers, who inspected them carefully to see that they were perfectly clear and transparent throughout, naturally become skeptical when we learn these "skins" nowadays are bought by the bushel, so to speak, in Chicago and other large cities, all cleaned and ready for use for a few cents a pound, and, as butchers have told me, for less than they can clean their own "skins," and then to look at these slimy coverings for our sausage and take a few sniffs of their fragrance before they are used, and I am sure that but few of you will be able to suppress the feeling of skepticism as to their actual cleanliness.

The question now naturally arises, how are we to improve this state of affairs as regard the slaughter houses of our cities?

My reply is to establish an abattoir, which, in other words, is a city slaughter house, owned, governed, controlled and run by the city, where all animals and fowls must be inspected before they are killed, and where all meat brought to the city must pass inspection before it is placed on sale in the city markets.

In this way you would only have, and only need to support one slaughter house instead of ten. This could be made first-class in all its appointments, from a sanitary and cleanly standpoint, as well as from a humane aspect. Ample yards, clean, healthy, comfortable stalls and coops should be supplied, where the

animals and fowls can be properly cared for and fed and watered until inspected and slaughtered.

The building should be so constructed as to be always kept in a perfectly sanitary condition, as well as scrupulously clean. The floor should be made so it can be flushed, and kept perfectly clean, and the blood and offal all cleaned up every day and properly cared for, which should be done by cremating it, or by using it for a fertilizer, but not by feeding a pen of pigs in an adjoining inclosure to the slaughter house.

If it is used for feeding hogs at all, they should be kept far enough away from the slaughter house not to taint the air under any circumstances, and hogs so raised should not be killed for pork until they have been fed for at least six or eight weeks on corn, oats or chop feed, without the use of any offal whatever, before they are killed; and even under these circumstances I do not consider it economy or advisable to use the offal in this way, as it cannot be productive of the highest class of pork.

A competent butcher should be put in charge of this abattoir under the control and direction of the health department of the city and be allowed such help as is necessary to do the requisite amount of work. A competent live stock and dressed meat inspector should be employed, who should inspect all the animals and fowls before they are slaughtered and all the dressed or undressed meat of any kind before it is sold or placed on the market.

This will in no way interfere with the meat markets or prevent any butcher from buying his own beeves, sheep or swine, but instead of killing them himself he takes them to the abattoir, where they are inspected, slaughtered, dressed and the meat returned to him and he charged with the actual expenses for the same, except the cost of the inspection, which the city should pay.

All the rendering of lard and tallow, the making of sausage, bologna and pudding meat and the curing of hams, bacon or dried beef should be done at the abattoir for each butcher and delivered to him in proper condition at simply the cost of production.

No meat dressed outside of the corporation limits should be allowed to be placed on the city markets before it is inspected and receives a clearance card from such official. All fowls, whether dressed or alive, intended for the city markets should pass through the abattoir and be inspected before being placed on sale, and when dressed for the city trade should be dressed at the abattoir and returned to the salesman or market place.

In Boston, where they established an abattoir in 1877, the clerk of the board of health of that city wrote me: "The establishment of the abattoir in this city removed from our midst a number of slaughter houses that no effort of the board of health could prevent from being an offence to the public in their neighborhood. No complaint has been made against the abattoir since its establishment, and from frequent personal examinations it appears to be conducted with the care and vigilance all such institutions should be if they are to be a success such as we believe ours to be."

The Evils of Tea-Drinking.

BY J. CHESTON MORRIS, M.D.,
of Philadelphia.

YOU ask me for my views on the "tea question." Further experience confirms me in those already expressed by me. True, Dr. Johnson scrawled "Tu doces" on the lid of a tea-chest, and Schiller wrote many of his poems under the influence of "the cup that cheers, but not inebriates." But I find that Kalm says that "previous to the introduction of tea into North America decayed teeth and debilitated stomachs were unknown." This is taken from a curious volume, now rather rare, written by Prof. G. G. Sigmond. ("Tea: its Effects, Medicinal and Moral." London, 1839.) To it I would refer those who may want information as to the mode of cultivation and preparation of the article. To be sure, no one can doubt that the substitution of a non-alcoholic beverage for the various drinks of our forefathers in Western Europe has been, on the whole an advantage during the last two and a half centuries; and to judge by the populousness of the Chinese and Russian empires one, would say that tea could not produce serious impairment of human stamina. How far national character may depend on national habits of food and drink, is a large question to enter upon. If Prince Bismarck is right in attributing the national characteristics of the Germans at present to their beer-guzzling propensities, what are we to say as to those of the Chinese and Russians? This is taking a long-range view of the subject, and yet we may draw some important inferences from it. Like other substances, tea has its uses—like them, too, its abuses. It steadies and stimulates the nerves; it lessens tissue-waste (the chemists tell us). But in these, its refreshing effects, its activity does not end. Effete matter has still ultimately to be removed, and jaded nerves, delusively calmed, take up again their task, unsupported by the nourishment they demand. Hence the ultimate effect upon them is degeneration—softening; and but too many an active thinker is thus lured on until irreparable damage is done. I think in this absence of nutritive power the great evil of constant tea-drinking lies. When taken very moderately, and not as a substitute for, but only as an adjuvant to, digestible food, tea has a useful role to fulfil. But its advocates are rarely satisfied with this. Besides, there are many delicate nervous organizations who respond most readily to its calmative, semi-stimulating properties only to fall victims to its dyspepsia-producing powers. I have seen many such—as truly victims to their own intemperance as the votaries of the whiskey-bottle. I would especially warn those who never find themselves comfortable long without their cup of tea, and remind them of Rev. Dudley Tyng's definition of a drunkard—"a man to whom one drink a day is a necessity."

The effects of constant tea-drinking, though less injurious to the individual and to society, are none the less sure. Let them substitute a cup of hot milk, with a little salt in it, twice or thrice daily, and the additional nourishment and improvement in their digestive processes will soon cause pale cheeks to blossom as the rose, and nervous troubles to vanish.

1511 Spruce Street, Philadelphia, January 21st, 1891.



DR. KOCH.

[From *The Bacteriological World*.]



LOUIS PASTEUR.

The two most-talked-of Men in the world to-day.

THE ANNALS
of HYGIENE, ❖ ❖

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EDITORIAL.

The Four Young Men and the Sheriff.

HERE we have a young man who, at 21 years of age, comes into a fortune of \$1,000,000, invested in mortgages, paying him 5 per cent. His annual income is, therefore, \$50,000.

He marries and lives well:

Household expenses,	\$20,000 per year.
Fast horses,	10,000 " "
Club and wine,	2,000 " "
Scrapes,	5,000 " "
Losses at horse races, etc.,	13,000 " "

Annual expenses, \$50,000

At 22 he is no better off than he was at 21. Now he gets into a big scrape, because of his wild ways, and it costs him \$50,000 to get out of it. He is now only worth \$950,000. His income is only \$47,500; his expenses the same. Therefore he must draw on his principal for \$2,500. He gets tight one day, goes into Wall Street, and tries to break Jay Gould. Result: he is only worth \$700,000, and Mr. Gould is richer by \$200,000.

Income now reduced to \$35,000; expenses the same; draws on his principal to make up the deficiency. Makes no extraordinary losses for five years, but has, during this time, drawn on his principal to the extent of \$95,000. Is now 27 years old, and worth \$625,000.

Gets tight one night at the club, and bets on politics. Result: loses \$5,000. Goes to the Saratoga races and drops \$2,500; is fascinated by one of the chorus girls in Francis Wilson's Opera Company, and gives her a \$2,000 diamond necklace. With vision blurred by champagne, he sees a trotter, cheap at \$1,000; buys him and finds him worth \$100; loss, \$900. Goes to Europe and drops \$10,000 on the roulette table at Monte Carlo. Losses for the year, \$18,400; extra expenses in Europe, \$6,600; deficit in income for living expenses, \$15,000; total, \$40,000, to be taken from principal. Twenty-eight years old; worth \$585,000; income reduced to \$29,250. Decides to reform, but cannot get used to living less extravagantly; makes no unusual losses; gets into no special scrapes; but lives during the next ten years at the rate of \$50,000 per year.

Income, \$29,250; expenses, \$50,000; deficiency, \$20,750—multiplied by 10, \$207,400; deducted from \$585,000, leaves him, at 38, worth \$378,000; income

only \$18,900. Makes a desperate effort to live within his income; gets his expenses down to \$25,000, and keeps them there for ten years. Deficit per year, \$6,100; for ten years, \$61,000. Forty-eight years old, worth \$318,000; falls into one of his old scrapes, and it costs him \$50,000. Worth \$268,000; income only \$13,800. Becomes desperate; goes into Wall Street in the hope of retrieving his fortune, and comes out worth just exactly \$680, and straightway proceeds to make the acquaintance of the sheriff.

This young man, at 21 years of age, inherited \$10,000. He invests it at 5 per cent.; income, \$500. He gets a position that pays him \$10 per week, and his living expenses are \$10 per week. At 22 years of age he is worth \$10,500. His salary is now raised to \$15 per week; his living expenses increase to \$12.50; \$2.50 per week saved makes \$130 per year. \$10,500

130

\$10,630 is his fortune at 22. Now, for five years, his salary goes on at \$20 per week, his expenses at \$15. His principal is intact, drawing interest, and his interest again itself earns interest. At 27 he is worth \$15,000. He now becomes a partner and makes \$10,000 per year; at 30 he is worth \$50,000. He makes a judicious investment in real estate; improvements come along, and at 35 he is worth \$100,000. This course he persists in, and at 50 he is worth \$1,000,000, and he has never heard of the sheriff.

This young man inherited great vigor from hardy, sturdy ancestry. He was brought up in the city, thoroughly educated and early introduced to society. At 21 he knows thoroughly the ways of the world, but has no love for nature. Dyspepsia is quite familiar to him, and his nerves are not of the best. A cocktail or a gin fizz or brandy-and-soda will straighten him out in the morning, but the next night's dissipation uses him up. After a while it takes two and three, and even four, matutinal cocktails to "*brace him*," and even then he is only half braced. He tries a trip to Europe, plays cards and drinks champagne all the way over, and wonders why the ocean voyage has done him no good. Sees the "*Elephant*," and comes home with less physical vigor than he started. Tries to make himself think that he is enjoying life, but fails to feel even decently well, except when he is "*half full*." Goes to the doctor and finds that his liver is out of gear, his stomach disordered, and that his kidneys are not very active. Is told that he has been consuming his heritage of physical vigor. Keeps on in the same course, suddenly breaks down at 48 years of age, and also meets the sheriff—Death.

This young man is far from strong. His father and mother died of consumption, and he is threatened with the same disease. He lives in the country, though he does business in town. When his day's work is done he does not

visit the club, but goes home and amuses himself in the way best suited to his tastes. He has no use for rich, highly-seasoned food, but loves a good, juicy beefsteak and plain, wholesome diet. He did not, at first, like the country, but, believing that by a *natural*, country life he could best not only preserve intact, but actually increase his small inheritance of vigor, and realizing that his will should be the master of his emotions, he compelled himself to become a countryman. As he became familiar with the features of country life, he became charmed therewith, so that now there is no necessity for him to *try to make himself believe that he enjoys life*, because the very act of his existence is a supreme pleasure to him. He is growing stout and strong; that appearance of consumption is vanishing. He is now, at 48, much richer in physical vigor than he was at 21. His children do not present that consumptive tendency so marked in him in his early life. He grows gradually richer and richer physically, and he transmits, without feeling the loss, so great is his wealth, an abundance of this vigor to his children. He never hears of the sheriff; but, finally, after having really *lived* his life, falls asleep and wakes no more.

Our Duty to Our Health.

"THOU shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy mind, and with all thy strength." We hear much about serving God with heart and soul, much less about mental service and least of all of physical service, when all else hinges upon the last named. A great duty which we should learn to recognize is that of possessing as good health as possible. We hear all about us "I have miserable health," as though it were inevitable and the physician alone could aid us, when the habits and good care of the individual have the largest part of the responsibility. When the great aim of our life should be to work earnestly and vigorously in the cause of humanity, we should realize our duty in the husbanding of our strength. What right have we by our carelessness and ignorance of the laws of physiology to impair our health and render ourselves unfit for the wear and strain of life? Ignorance is oftentimes as criminal as deliberate sinning. We blame ourselves for a lack of spirituality, for want of interest and little enthusiasm in life; we strive and battle against feelings which we do not wish to cherish; we wonder why we so often give up the battle in despair.

A certain lady remarked that when she heard young people speak of the trials, temptations and disappointments of life, she immediately judged them to be victims of dyspepsia. There are comparatively few who have the brisk, light step, the healthy color, the well-developed figure, with great power of physical endurance, all of which contribute to spiritual and mental growth. We must learn to regard physical sins as greatly displeasing in God's sight. Then when we feel the flush and exuberance of grand health we will have fewer struggles with ourselves and more time to devote to the welfare of others.

Gladstone, Longfellow and Dr. Agnew are grand examples of a vigorous constitution possessed long after the prescribed three-score years and ten; and,

do not mistake, their health came not by chance, but by following the best kind of knowledge.

Good health is the duty and within the reach of all, and when once we possess it we may be sure it will not be fickle and desert us at a moment's notice.

Pennsylvania State Sanitary Convention.

THE Fifth State Sanitary Convention of Pennsylvania will be held at Altoona, Friday and Saturday, May 15th and 16th, 1891, under the auspices of the State Board of Health, assisted by the Board of Health of Altoona and a committee of the citizens. This is not in any sense a doctors' convention. All who take an intelligent interest in the promotion of sanitary reform and the protection of the public health are invited not only to be present and take part in the discussions, but to forward to the secretary, Dr. Benjamin Lee, 1532 Pine Street, Philadelphia, for consideration by the committee of the board, not later than April 15th, papers on sanitary or hygienic subjects which they would like to present before the Convention.

American Medical Association.—Section of State Medicine.

DR. BENJAMIN LEE, secretary of the State Board of Health of Pennsylvania, has accepted the position of secretary of the Section on State Medicine of the American Medical Association. As the meeting takes place in Washington, May 5th, it is important that all papers intended for this section should be in his hands by the fifth of April. All members of the association desiring to be enrolled in the section are requested to forward him their names at 1532 Pine Street, Philadelphia.

Vital Statistics of American Jews.

The last census contains a study of the vital statistics of the Jews resident in this country. The inquiry resulted in the return of 10,618 completed family schedules, embracing 60,630 living persons; in these families there had been 2,148 marriages, 6,038 births, and 2,062 deaths during five years. The deaths reported for the five years give an average annual death-rate of 7.11 per 1,000 of population, being about half of the average rate for the general population. The expectation of life at the age of ten years, based upon the death-rate for the year of 1889, is 61.11 and 56.02 years for males and females, respectively, as against 49.99 and 48.05 as calculated by life insurance companies for the general population of this country. Contrasting the birth and death-rates for those of native-born and foreign-born patients, indicates that the birth-rate is decreasing, and the death-rate increasing with more prolonged residence in this country; but the general results indicate that the Jews here retain many of the peculiarities which have been noted among them in Europe.

NOTES AND COMMENTS.

"The Jolly Bacillus."

A coffee-house, with pretty waitresses, has opened in Berlin, bearing over its portals a sign consisting of Koch's portrait, with the inscription, "The Jolly Bacillus."

Toothache Drops.

The *Chemist and Doctor* says that a single drop of the following tincture on cotton wool placed in the tooth gives splendid results: Two drops of pure coniine and eight drops of oil of cinnamon dissolved in 4 drachms of alcohol.

About the Way it is Done.

Johnny—Ain't yer going ter school, Jim?

Jimmie—Naw, we got the scullet fever at our house and de doctor sez I can't go ter school. I'm going to der dime museum dis aft. So long.—*Boston Herald.*

The United States Government and the Curative Lymph.

The Hon. Mr. Platt, M.C., of Connecticut, has introduced a resolution to appropriate \$10,000 to enable the President to take action to obtain from the German Government a supply of the remedy discovered by Dr. Koch, and the formula for its manufacture.

For Nose-Bleed.

Moderate nose-bleed is a good thing and need cause no alarm, but when it becomes excessive Dr. Jonathan Hutchinson recommends for its treatment the plunging of the feet and hands of the patient into water as hot as can be borne. He declares that the most rebellious cases have never resisted this mode of treatment.

Fatal Superstition.

A Newcastle woman had a "wen" on her neck, for which a "wise woman" advised her to go alone and lay all night in an outhouse with the hand of a corpse on the wen, as an infallible cure. She did so, and the shock was so great that she did not rally for months, but finally died of the wen. The corpse was that of a suicide.

A Congress of Fat Men.

A Fat Men's Congress was recently held at Berlin, and the following data were collected: Herr Berg, a brewer, from Sraulau, was the largest man, weighing 399 pounds, or upward of 28 stone; Ferdinand Colin, from Angemunde, another delegate, weighing 365 pounds; and Herr Hubert, a saloon keeper of Berlin, weighing 364 pounds.

To Remove Thirst.

Of course, you will say that the best way to remove thirst is to take a drink, and so it usually is, but not always. Sometimes, when unwell, a person may drink water until he feels ready to burst, yet that annoying thirst grows no less. It is said that if we paint the tongue with glycerine or rinse the mouth out with glycerine and water it will remove the sensation of thirst and discomfort felt when the tongue is dry and foul.

Cheap Cremation.

A man in Hagerstown, Md., who died recently leaving a handsome property, directed in his will that his funeral expenses should not exceed \$30, and that his remains be conveyed to the burial place in a spring wagon. He directed that his body be wrapped in a cloth, packed in unslacked lime, and that \$5.00 be set aside for some one to pour water into his coffin until the lime cremated the body.

Wide Streets and Consumption.

It is a fact that has been developed by Dr. J. M. Anders, of this city, that consumption is, relatively, more prevalent in narrow than in wide streets, and that in narrow streets the mortality is greatest where the streets are long or where they form *culs-de-sac*. From this fact new and growing towns should learn a valuable lesson. We cannot make our streets too wide for health but we can, very easily, make them too narrow.

A Royal Teetotaller.

The King of Samoa is determined that his subjects shall be sober, if they are not free. He has just issued a proclamation to the following effect: "No spirituous, vinous, or fermented liquors, or intoxicating drinks whatever, shall be sold, given, or offered to be brought or bartered by any native Samoan, or Pacific Islander resident in Samoa, to be taken as a beverage." Any breach of this law is to be visited with heavy penalties.

Soapology and Scrubology.

Whatever may be thought of the religious views of General Booth, of "The Salvation Army," we are forced to concede that he must take high rank as a sanitarian and as a man of common sense, for does he not announce his belief that in soapology and scrubology, rather than theology, are to be found the redeeming and civilizing agencies for the lower nineteen-twentieths of humanity? Good for General Booth; sounder wisdom has never issued from human mouth.

To Relieve Asthma.

Let those of our friends who are subject to those most distressing paroxysms of spasmodic asthma, try the following simple remedy, when next they

are attacked : Draw in through the nose, slowly, the air, until the chest is expanded and distended to its fullest possible capacity, and keep it so distended as long as possible. When it becomes necessary to expire, do so and fill up again as before, the idea being to keep the chest as fully distended for as long a time as possible.

Food for Infants.

DR. LOUIS STARR recommends the following as the best substitute for the mother's milk in gradual weaning of a child, say at ten months : it may also be employed to supplant the breast when the mother's milk is insufficient : Cream, one tablespoonful ; milk, five tablespoonfuls ; sugar of milk, half a teaspoonful ; water, two tablespoonfuls. Should this quantity fail to satisfy the child, all the ingredients except the cream may be increased until the mixture measures six, eight or twelve ounces.

Early Rising.

We do not belong to that class of sanitarians who hold that one should "live by rule ;" hence, while we would not claim that early rising is essential to health, we would call attention to the fact that nearly all healthy, wealthy and successful persons are early risers. This may, of course, be merely a coincidence, but we incline to think that there is more of "cause and effect" than of "chance" connected therewith. Early rising, to be effective, entails early retiring, for an abundance of sleep is an absolute requisite of health.

A Cure for Corns.

Don't cut them ; never use the knife on your body when it is possible to avoid it. Ask the corner druggist to make you a mixture of nine parts of salicylic acid, one part of extract of cannabis indica and forty-eight parts of collodion. With a camel's-hair brush paint this mixture over the corn night and morning ; paint it thoroughly, five or six coats, and let it thoroughly dry, before coming in contact with the clothing. In a short time you can lift the corn away. If persistently and thoroughly used, we know this remedy to be a good one.

Suicide Among School Children in Prussia.

Recently published statistics show that there is more "over-pressure" among school children in Prussia than in England—or, at any rate, that it leads to more tragic results. In the six years, 1883–88, there were 289 cases of suicide among school children in Prussia, 240 of them having been boys and 49 girls. In 86, or 29.8 per cent. of the cases, the motive of the deed is unknown ; but in 80 the cases were "fear of punishment ; in 19, "disappointed ambition ;" in 16, "fear of examination ;" and in 28, "insanity and melancholia ;" 5 of the suicides are attributed to "love," and 7 are believed to have been half unintentional.

Don't Lend Opera Glasses.

A curious case is occupying the attention of an eye physician in Berlin. A Government official suddenly fell ill with sore eyes, and a specialist was called in. The physician came to the conclusion that the sickness had been communicated to his patient, and asked him whether he had been in the society of any person suffering from disease of the eyes. Thinking for a moment, the patient replied that one evening, while at the theatre, he sat next to a lady who appeared to him to be suffering from an affection of the eyes, and that she had borrowed his opera glasses.

Unsound Athleticism.

A sanitary census has recently been made in an athletic club of New York City, and it was shown thereby that it had quite a number of damaged members. Out of thirty-three all-round athletes in the club five years ago, three had died by consumption, five have to wear trusses for rupture, four or five are lop-shouldered and three or more have impaired hearing and catarrh. For robust health and longevity it is best not to look among those who go their full lengths in modern systems of athleticism.

The Beef Tea Fallacy.

If there is one popular error more universally rooted in the mind of humanity than another it is that beef tea is a very nourishing article. The truth is that there is hardly anything that contains less nourishment. Dr. E. B. Ward, in the *American Lancet*, gives it as his very forcible opinion that thousands of sick persons have been starved to death on beef tea. Milk he considers far preferable. If, however, you persist in using beef tea do not boil it, for when by boiling you have coagulated the albumen and fibrin of the meat you have made them practically indigestible.

What Makes Life Worth Living.

Health, first, of course; then, as Oliver Wendell Holmes tersely puts it: "It's faith in something, and enthusiasm for something, that makes a life worth looking at." To us, it is our enthusiasm for hygiene and our faith in the coming universal interest in the subject, that makes to us, this life so truly delightful that we would have it endless. More efficacious than the elixir of Brown-Séquard, or even the lymph of Koch, will be the instillation of the essence of hygiene as a demonstrating and convincing argument, to all who will receive it, that life, in this world, is really worth living.

To Clean Tarnished Gold or Silver.

Tarnished gold may be cleaned, according to the *Jewelers' Circular*, by the following mixture.—In 16 ounces of water mix 2 ounces of bicarbonate of soda, 1 ounce of chlorinated lime, 1 ounce of common salt. Apply with a soft brush, using the solution either cold or slightly warm.

For cleaning silver, rub the articles with salt, using a small sponge, piece of flannel, or chamois. Then polish with a little prepared chalk made into a thick paste with water to which a few drops of ammonia or alcohol have been added, this paste to be brushed or rubbed over the article.

Quarantine Against Cholera.

The suggestions of Dr. J. H. Rauch, secretary of the Illinois State Board of Health, upon this subject are timely, and should receive most careful consideration. He predicts a serious invasion of cholera unless efficient quarantine regulations are adopted. In Abyssinia 10,000 people have died of cholera during the last six months. In India it is epidemic. It is not yet extinct in Spain. In the Asiatic provinces of Russia, in Corea and Japan, 80,000 people have recently died of this disease, and he urges that our Pacific coast be especially subject to the strictest of quarantine supervision.

Relief from Obesity.

A POPULAR method for the reduction of superabundant flesh, practiced with very good success by the mountaineers of western Switzerland and Savoy, according to the information obtained in those countries, is, to eat one kind of food only at each meal. If a preparation of flour, rice, wheat or other material is partaken of, eat of that only at that meal. No absolute restriction as to kind is required, or amount, although starchy foods, if largely used, give less successful results than meat, eggs, peas, beans, cheese, fish, etc. Obesity is not a welcome condition of the body among the dwellers of Alpine countries.

Why Senator Ingalls Deserved Defeat.

John H. Ingalls, of Kansas, is certainly a brilliant man, but if it be true, as the newspapers relate, that when his children were small he was accustomed to relate to them a tale called "The Demon of the Blacksnake Hills," a thrilling story of adventure, "made up" as the author went along, and occupying countless winter evenings; if such be the case, then we are sure that no sanitarian will have a particle of sympathy for him in his recent defeat. Certainly, a man with so little *common sense* as to fill the little brains of his own offspring with such "nerve-wrecking" tales would be an unsafe framer of national laws, even though he possessed the eloquence of Demosthenes.

The Potato Cure for Foreign Bodies.

There are few things more terrifying than the knowledge that one's child has swallowed a nail or a screw or a pin or a needle, and anxious, indeed, are the moments passed until the foreign body is expelled. What to do is the first thought of the anxious parent. Let us impress upon you what not to do. *Do not give oil or any other medicine to open the bowels.* You want the bowels closed until the foreign body has become so coated that it can be passed harmlessly. Dr. Edward Pisks, of New York, recommends that in these cases we

should feed the child exclusively upon potatoes and bread dipped in milk, until the article has been found in the evacuations. If it has not been passed at the end of three or four days, then a laxative may be given. In this connection attention is called to a method which has been practiced for years by English thieves, who put away all kinds of articles, when caught in the act of the thieving, by swallowing the same, and then they eat a great quantity of potatoes, until they rid themselves of the articles swallowed.

Women Make the Best Sanitarians.

We have repeatedly expressed our anxious desire to interest women in hygiene, because of their earnestness when their interest is secured. An incident that occurred recently in New York demonstrates how correct we are in this view. It seems that there are now some women on the school boards of New York city, and it happened that a janitor of one of these schools came one day with a complaint to the principal. He said that he had been janitor of that building for nineteen years, and no one had ever asked to see the basement until one of the women of the school board came and said she wanted to make an examination. "And that basement wasn't in a fit condition for anyone to see," he added, plaintively.

Winking as a Test of Vision.

It will be something of news to learn that of 300 persons examined by Dr. Charles E. Rider, of Boston, the vision of the two eyes was unequal in 175, and it will be curious, as well as practically valuable, to learn that when these persons were asked to wink, 130 of them would close the poorer eye. The medico-legal aspect of this fact possesses more significance than does its hygienic; though even here we find a practical application. If it be noted that, when asked to wink, a person invariably closes the same eye, rather than to vary the procedure, it may be fair to infer, in the light of the facts studied above, that the winking eye may not be as good as its fellow; from which we may be warned that this eye may need attention in time to save and conserve its usefulness.

Modern French Mummies.

A new process of cremation and mummifying has been proposed in France, based upon the well-known and successful experiments in plating with copper or other metals, by means of electrolysis, the most delicate tissues of grasses, leaves and skins. Certain Frenchmen have, as an experiment, actually plated a dead child. The result is a perfectly faithful statue of the subject, truer to life than any sculptor could hope to achieve. The metallic shell is strong enough to withstand shocks. To receive the electroplating of copper, aluminium, or gold, as the case may be, the skin is prepared by a bath of nitrate of silver, and the silver reduced upon it by the vapor of phosphorus. There are also various other ways of providing the necessary "electrode," on which to deposit the coating.

Quinine and the American Girl.

If it be true (and we hope and trust that it is not), as the *British Medical Journal* says, that it is now the *fad* for our girls to carry around with them ornamental cut-glass bottles containing quinine pills with which they dose themselves from time to time, if it be true, then a word of caution is in order. We solemnly and emphatically tell these girls that quinine is a two-edged sword. Look out; be careful how you trifle with a really powerful drug. The popular use of quinine, we verily believe, has done nearly as much harm as the popular use of whiskey, though its evil effects being less apparent, we are prepared to have our statement ridiculed. Nevertheless it is true, ridicule and disbelief to the contrary notwithstanding. Let it alone.

Children's Bowels.

The mother of three children told us, recently, that one day they all came in from an outing in a most belligerent and anarchistic frame of mind. Peevish, cross and unreasonable, for a time there was waged quite a brisk internicine warfare. The command was given for each in turn to go to the water-closet. The most successful efforts of the most capable of "peace commissions" would sink into insignificance when compared with the result of this bowel evacuation. Where before all was turbulence, peace now reigned supreme. Of course, we do not wish to be understood as recommending forced evacuation of the bowels as a universal panacea for childish fretfulness, but we do believe that neglect of the calls of nature has much to do with the irritability and annoying fretfulness of children at times.

Constipation a Cause of Diarrhœa.

It is not very generally known that, paradoxical as it may seem, diarrhœa is not infrequently caused by constipation. Thus, suppose one has eaten something indigestible; not being digested, this article cannot be assimilated. From the stomach it is passed on into the bowels, where it will act as an irritant. This irritation will cause griping and frequent desire to evacuate the bowels with thin, watery discharges; yet the bowels are not sufficiently moved to carry off the undigested, irritating article. A liberal dose of castor oil will carry everything before it, and the cause being removed, the diarrhœa will cease. Strange as it may seem, to cure diarrhœa by giving a purge, yet in such cases as we have mentioned the measure suggested will prove most efficacious.

Impure Ice.

Now that our friends living in the country are filling their ice houses, it may be well to remind them that impure ice means *impure ice-water* next Summer. *Freezing will not kill the germs of disease.* The State Board of Health of New York, after a careful investigation of the subject, recently came to the following conclusions as to the effects of impure ice in causing disease: Ice formed in impure water has caused sickness; it may contain from 8 to 10 per

cent. of the organic matter dissolved in the water, and in addition a very large amount of organic matter that had been merely suspended or floating in it; it may contain living animals and plants ranging in size from visible worms down to the minutest spores, and the vitality of these organisms may be unaffected by freezing.

Hot Water in a Hurry.

Very often a physician needs hot water in the middle of the night when there are no conveniences at the house of his patient to obtain it. Especially is this apt to be the case in summer time. If there should be a kerosene lamp handy with a chimney having a corrugated top this want can be easily met. Place an ordinary tin cup with a sufficient amount of water upon the top of the chimney. The corrugations let out the heated air so that the lamp will not smoke and the water will quickly become hot. This is often a great convenience, and it is astonishing how quickly the needed hot water can be obtained. As a practical thing it may serve a useful purpose.—*Dixie Doctor.*

Unhealthy Dried Fruit.

Director Hilgard, of the California Station, believes that the public should be taught to prefer "healthy, brown, high-flavored fruit, to the sickly-tinted, chemically-tainted product of the sulphur box." When freshly sliced fruit is treated with sulphurous acid for a short time, the effects are slight, yet such as to protect the fruit from insects. When thoroughly sulphured after drying, however, the fruit is injured in flavor; and, worse still, sulphuric acid is formed in sufficient amount to be injurious to health. By analysis sulphured apricots have been found to contain .232 per cent. of sulphuric acid, or about 25 grains of oil of vitriol per pound, and prunes .346 per cent. of sulphuric acid. In most countries of Europe the sale of sulphured fruit is forbidden.

Ingrowing Toe-nail.

Even the worst cases of this most painful affliction may be cured by patiently and persistently pursuing the following course of treatment: First, and imperatively, all pressure must be removed from the toe; a very loose shoe or a slipper must be worn at all times; if you are not willing to do this you had better call in the surgeon and have the nail removed at once, for nothing else will effect a cure. Having removed all pressure, have someone introduce a pledget of cotton under the nail and work it down with the point of a pair of scissors so that it will somewhat elevate the ingrowing point of nail. Then allow a few drops of the tincture of the chloride of iron to fall on the cotton. The iron will deaden sensibility, so that by the next day the cotton can be worked further under the nail and so on, day by day, until finally the point of the nail is lifted from the flesh, when it may be snipped off. Patience, cotton, iron and the endurance a little pain will work a cure in all cases.

"Fasts Before Feasts."

In our last issue we advised the restoration of nature's equilibrium by always securing an amount of repose that might offset any previous excess. In this connection we are moved to commend the wisdom of that religion which, recognizing that on certain days or occasions humanity will indulge in a species of gluttony, prepares the physical nature for this excess by ordering that on the previous day abstemiousness shall be practiced. Ostensibly a form of religion, we doubt not that the rule providing that a fast should precede a feast had, as one of the chief reasons for its institution, the conservation of health. It would indeed be well if those who are not members of that church which makes this order should take its wisdom to heart and act upon it. Let the day of *expected Turkey*, be preceded by a day of but moderate indulgence.

The Power of Imagination.

A traveler, once upon a time, was walking the deck of a Pacific Mail steamer at night as she plowed her way beneath the Southern Cross. Suddenly he saw a ghastly yellow figure going North. He cried out: "Who are you?" The answer came: "I am the Yellow Fever." "Where are you going?" "To the States, to kill 20,000 people." "Grant me a favor: only kill 10,000!" "Very well;" and away the figure flew to destroy. On his return to the North, three months later, the traveler encountered, in the same place in the Southern sea, the yellow monster. "Ah," he cried, "you lied to me! I have heard that you killed 30,000 people!" "Nay, I did but kill 10,000. Imagination did the rest," and the yellow wraith vanished in the South.

A Remedy for Palpitation.

Dr. Gingeot, in the Journal of the American Medical Association, recommends as a valuable remedy for palpitation—one that has proved serviceable to him—the application of cold to the region of the heart. The simplest plan is to apply a wet sponge over the heart in the morning before dressing. At night, when in bed, the patient or an assistant may put a cold compress over the heart, well covered with dry bandages, to retain moisture, and prevent any wetting of the clothing. When this compress is warm, the patient may remove it, and will probably fall asleep. There are objections to the ice-bag, one being the condensation of insensible perspiration upon the surface of the skin. Palpitation of purely nervous origin seldom fails to be greatly benefited by the application of cold; and a certain success often follows its use in cases of palpitation due to organic diseases.

Originality a Friend to Health.

If it be true that laziness is a foe to originality, and if the process of reasoning by which this statement has been evolved be logical, then may we believe that originality, which antagonizes laziness, is a friend to health. There is nothing that will give a person more serene self-contentment (a condition very essential to health), than the knowledge that he or she possesses a certain individuality,

and since originality is a pre-requisite of individuality, so does originality become an element of health. It is, of course, much easier to follow in the course of others than to originate for ourselves, hence will the lazy person find originality distasteful. Let us, however, cultivate each an individuality, by the aid of originality, and note, as this individuality develops, if we do not experience a growing self-complacency that makes our lives seem the more worth living, our digestion more complete and our sleep more refreshing.

Breathing Through the Nose.

Very few non-medical persons realize that nature intends that we shall breathe through the nose rather than the mouth. In the first place, the air passing through the nose is warmed therein before it reaches the lungs, and many a "cold on the chest" would be prevented by this practice. But a more important argument is to be found in the fact that the nose is a filter, so to speak. The inside of the nose is coated with a sticky mucus; the disease germs in the air adhere to this mucus and are blown out again into the handkerchief. If taken into the mouth, they adhere to the sides thereof until, washed therefrom by the saliva, they are swallowed into the stomach and find thus easy access to the system. We believe that it will be most wise to cultivate the habit of keeping the mouth closed and breathing through the nose.

Leprosy Among Indians.

While we have good authority for believing that the only "good Indian" is a "dead Indian," yet we must have some sympathy with these children of nature, when we remember that much of their wickedness is, undoubtedly, due to the contaminating influence of our fellow pale-faces. If we can believe history, our good old friend William Penn did not find the Indians such a bad lot. But what, with fire-water, deceit, treachery and rapacity, our white people have done for the moral natures of these aborigines we find they are now doing for their physical. Consumption was a disease almost unknown among the Indians, in a state of nature before the advent of the white man and his rum, and now we find that, through the agency of the Chinese, that terrible disease, leprosy, is being introduced among the Indians of British Columbia. Taken all in all, the Indians certainly have no reason to bless the day when first the white man came among them.

Dust from Schoolroom Floors.

Not only the schoolroom floor, but the church floor, as well as the floor of all large halls, and, indeed, all wooden floors that are much used, certainly become very dirty and full of dust. When swept, this dust (most of it) is transferred from the floor to the desks or chairs or tables, to be again disseminated into the atmosphere when the room or hall is next used. So that the atmosphere of a room with an old wooden floor can never be very pure. To remedy this trouble in a very simple way, the Minnesota State Board of Health recommends that the floors of schoolrooms should be, after a thorough sweep-

ing, saturated on a Saturday morning with boiled linseed oil, the cost of which will be trifling. By Monday morning the floor will be dry and the crevices in the wood filled up and impervious to dust. If this oiling be repeated once in two weeks, the floor will become as hard as oak and will be very easily cleaned. The measure suggested is certainly very simple. Try it.

The Death of Emma Abbott.

Looking upon the portrait of this great singer we see that she was a fleshy woman ; she was fat. Throughout all of this fat the microscope would have revealed to us minute bloodvessels through which it was necessary for the heart to pump the blood. If we arrange a system of water supply for a village and have a pump adequate to its task, all is well, but when this village becomes a city, when the original number of water pipes is multiplied five-fold, if we expect the original pump to do the work for this city we must be prepared to



have it give out in a short time. So is it with the fleshy person. The deposits of fat makes of the body an enormous sponge throughout all the meshes of which a little pump (the heart) no larger than the fist must force the blood. So long as no obstructions are encountered the heart may be equal to the task, but let some congestion cause an obstruction to the circulation, and the heart is paralyzed in its effort to overcome it. This is what caused Emma Abbott's death. A damp theatre caused a congestion of the lungs, and the heart, already weakened by the extra work that had been imposed upon it in pumping the blood through this vast sponge, became exhausted in its efforts to overcome this congestion, and death was the result. The lesson to be learned is that we should avoid the deposits of fat by plentiful exercise, and if, in spite of ourselves, we do grow corpulent, then we should remember that the heart, while competent, is correspondingly weaker, and that it will be doubly necessary for us to avoid all possible obstructions to the circulation, such as chilling of the body, damp rooms, cold feet or sudden exertion of any kind. A fat person's heart may be a sound heart, but, in proportion to the amount of work imposed upon it, it is not as strong a pump as is that of the thin person.

The Reduction of the General Death-Rate.

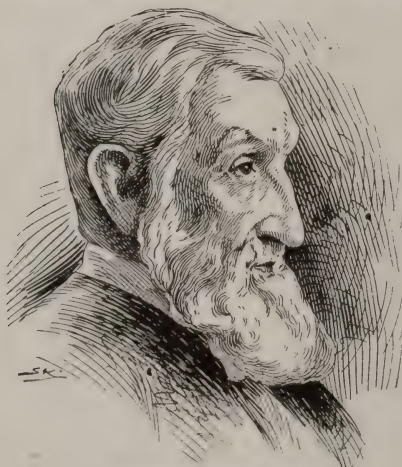
There is a belief that the death-rate is reduced by modern civilization. It is interesting to be able to secure positive observations supporting this belief. It is well known that in England and Wales such observations have been made extending over a term of years. Farr's first life tables were based upon the mortality in 1838 to 1854 in England and Wales. Comparing this with the last life table, we find that by the old table the mean life time of males was thirty-nine and ninety-one one-hundredths years, while by the new table it is forty-one and thirty-five one-hundredths years, a gain of about a year and a half upon the length of life of each male. Hence a million males would live one million four hundred and thirty-nine thousand, *plus*, more years than during the period of the old table. The expectation of life at birth of females has been augmented by two and seventy-seven one-hundredths years. Two millions of population will thus live more than four millions more years than they would during the period covered by the old table; or sixty millions of people would live one hundred and twenty millions more years than they would have done at the beginning of the present century. Further, the gain in these lives is mainly between the ages of 25 and 65, the most valuable portion of life. According to Farr, the minimum value of each life is about eight hundred dollars. It is easy to see that the momentary gain from this reduction of death-rate has been enormous.—*American Lancet*.

Micro-Organisms in Great Cities.

Professor Tarnier, in his course of lectures on obstetrics, in 1890, referred to M. Miquel's researches on the relative abundance of microorganisms in different places. One to the cubic metre of air is the proportion at the top of a high mountain. In the Parc de Montsouris, in the south of Paris, M. Miquel found 480 microorganisms to the cubic metre of air, whilst in the Rue de Rivoli the proportion was 3,480. In a new room in the Rue Censier he found 4,500 to the cubic metre; more, that is to say, than in the center of Paris in the open air. In a room in the Rue Monge, he counted 36,000, in the Hôtel Dieu 40,000, and in the Pitié, an older hospital, 319,000 microorganisms to the cubic metre. At the Observatory, Montsouris, 650,000 microbes were found in a gram (15 grs.) of dust; in the room in the Rue Monge the amount was 2,100,000. In the hospitals the proportion was so high that counting the number of microbes in a whole gram of dust was found to be impossible. The dust is the great conveyer of microorganisms. At 2 A.M., when a city is most quiet, the fewest germs are to be found in the air; at 8 A.M. the industry of domestic servants and dustmen has already made the air teem with germs. At 2 P.M. the proportion has again greatly fallen; at 7 P.M. it is once more high, for many houses are being "tidied up;" besides, sundry kitchen operations are unhygienic. Thus the "small hours," unfavorable in many respects to patients hovering between life and death, are the least septic of the twenty-four. The day proportions indicate that household duties cause more septic diffusion than is excited by traffic and industry.—*Brit. Med. Jour.*

Bancroft and Kalakaua.

The slight, ascetic, comparatively delicate historian, has, after 91 years of humanity, fallen asleep. The man who loved nature, and whose whole life was moulded in accord with her ways, has passed away, after having lived a life full of pleasure to himself and of profit to others. The stout, hearty, apparently robust and dusky king of the Sandwich Islands has died at scarcely more than half the historian's age. Intellectuality, cheerfulness, moderation and common sense prolonged the life of the one; whiskey, poker, rich food, excesses of various kinds, killed the latter. Bancroft *knew* that he thoroughly enjoyed his life in this world; Kalakaua tried to make himself believe that his *existence* was not a burden to him. George Bancroft's death makes the world



GEORGE BANCROFT.



KING KALAKAUA.

that much poorer; Kalakaua's departure makes no more difference than the disappearance of any other animal. If Bancroft could now think and act, remorse could not attack him, for by no act of his did he shorten, by even so much as one hour, his earthly existence. Could Kalakaua now meditate, he would curse himself as a fool, for his disregard of nature. The death of these two men coming so closely together will afford, to the sensible man, pabulum for most wholesome meditation. George Bancroft was *alive* until he *died*; Kalakaua was half dead for years before he wholly died. Strange as this may seem, it is literally true. Bancroft, up to within three days of his death was really and truly living; for some years Kalakaua's liver and kidneys and stomach were so deranged by excesses that while he continued to *exist*, he was, in reality, half dead, so far as *living* is concerned. Please note, when reflecting, that there is a vast difference between *living* and *existing*, and you will then be able to understand our apparent paradox.

A Mother and Her Dirty Children.

As we went "up country" the other day, there sat in front of us in the car what would have been a nice looking woman and three nice looking children if they had not been such utter strangers to soap, water and neatness. They

were well dressed; but the mother's blowsy hair, soiled hands and face, the scabby, sore eyes and scalded noses of the children, and that general aspect of untidiness easier to recognize than describe, made both the woman and her children anything but attractive. That the woman was irritable was evidenced by the way she would pull and grab and snatch a child for doing, we might say, nothing. Then the child would whimper and cry, the *nose would run* and it would be even less attractive than before. As we looked we thought certainly these children can give but little pleasure to this mother, and she, in turn, cannot add much to their delight; neither do we imagine that she makes much of a home for the husband. Hence, we thought, of what use is such a woman's life, since she creates neither happiness for herself nor for any one else. Then we took to dreaming, and we imagined this woman clean and tidy (for she had the elements of attractiveness in her appearance) with clean and tidy children. She would not have been so jerky with a neat-looking child, for it was the very unattractiveness of the children that made her so irritable with them. They, in turn, would have been less annoying to her, and her home would have truly been what the word implies. What a wonderful influence, we thought, is contained in the bath-tub; what potent elements in domestic felicity are soap and water.

A Noble Purpose.

"A servant with this clause,
Makes drudgery divine,
Who sweeps a room, as for thy laws,
Makes that and the action fine."

Some time ago in reading Ruskin's "Seven Lamps of Architecture," I came across these beautiful and suggestive words of George Herbert in its preface. Many times since they have come to me, but it was a long while before I appreciated their double meaning.

By following God's law of being "zealously affected" and in earnest, "fervent in business and serving the Lord," even in the simple household duties, our actions become fine. We are very apt to regard these same little duties as degrading; to tastefully set a table or sweep a room may be tolerated, but to sweep and iron and scrub! we must not be seen attending to such menial duties. Aside from the fact that all honest work well and honestly done is ennobling, the beneficial effect upon the health is marvellous. Many who think of the charming word "health," viewing it as something far off in the not-to-be-realized future, might find it practically within their reach if they were willing to follow nature's law of hygienic care and exercise.

Working for the sake of exercise and health, for the glory of a vigorous, active life, makes even seeming drudgery divine; that in sweeping a room as well as possible, and in practising the maxim, "what is worth doing is worth doing well," the simplest actions are ennobled and every motive elevated.

There is no action so slight, so trivial, but it may be done to a grand purpose, and so we will feel the nobler and stronger for it, mentally, spiritually and, far from least of all, physically.

Hygiene for Elderly Males.

Dr. R. Harrison offers the following advice to elderly men: 1. To avoid being placed under circumstances when the bladder cannot be emptied at will. Nothing is so injurious as an enforced retention. 2. To avoid checking perspiration by exposure to cold, and thus throwing additional work on the kidneys. In climates like our own, elderly persons should, both in summer and winter, wear flannel next the skin. 3. To be sparing of those wines and spirits (if used at all) exercising a marked effect upon the kidneys either by their quantity or quality. 4. To be tolerably constant in the quantity of fluids daily consumed. As we grow older our urinary organs become less capable of adapting themselves to extreme variations in excretion. Therefore it is desirable to keep to that average daily consumption of fluids which experience shows to be sufficient and necessary. How often has some festive occasion, where the average quantity of fluid daily consumed has been largely exceeded, led to the over-distention of a bladder long hovering between competency and incompetency. The retention thus occasioned by suspending the power of the bladder has frequently been the first direct step toward establishing a permanent, if not a fatal, condition of paralysis of this organ. 5. It is important that from time to time the reaction of the urine should be noted. When it becomes alkaline or offensive, the use of the catheter may be necessary. When a catheter is required it is most important that its selection should not be left entirely to the instrument maker. There are other points to be considered beyond the fact that it is to serve as an artificial outlet for the urine from the bladder. An unsuitable catheter may do much permanent harm. 6. Some regularity as to the time of evacuating the bladder should be inculcated. We recognize the importance of this in securing a regular and healthy action of the bowels, and though the conditions are not precisely analogous, yet a corresponding advantage will be derived from carrying out the same principle in regard to the bladder.

State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania.

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PLACE OF MEETING,

Supreme Court Room, State Capitol, Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Thursday in May, July and November.

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COMMUNICATIONS

Nasal Catarrh Hygienically Considered.

BY RALPH W. SEISS, M.D.,
of Philadelphia.

IF the importance of any disease be considered in relation to its prevalence, no malady can be of such interest to the resident of our Atlantic seaboard as nasal catarrh in its various phases. Fully 50 per cent. of our adult population suffer from sufficient nasal inflammation to cause more or less unpleasant symptoms, and one in five of these will show impairment of hearing, of voice, or signs of bronchial disease. The causes of so widespread a condition must, of necessity, be exceedingly various; most prominent among these may be mentioned atmospheric changes, especially rapid barometric variations, inherited weakness of heart and general circulation, and especially bad hygiene. It is in the hope of, to some minute extent, remedying the last named factor that this paper has been written.

Bad air of all sorts acts as a direct irritant to the mucous membrane of the nasal cavities; air laden with particles of *wool*, or minute fragments of some hard substance, such as coal, stone, or steel, is the worst of all; but all inhaled solid matters are injurious. Gases are less directly hurtful, and act more through the lungs and general circulation than directly on the nose; but many, especially derivatives of sulphur, are capable of producing severe nasal inflammation. The matter of ventilation, however, may be easily overdone. A prominent aurist has said that the chief cause of catarrhal deafness is, in his opinion, "the American fresh air craze," and certainly there could be no worse combination than spending an evening in a close, gas and furnace-heated room and then sleeping in one to which the night air has almost unlimited entrance. The division of oxygen should be more even, and, in the writer's opinion, even a somewhat "close" bed-room may be preferable to one draughty with winter air. The ideal sleeping apartment is, of course, one well ventilated, but wholly free from outside air draughts, and of a temperature of about 60° at midnight; living-rooms should average 70° to 73° as a winter temperature.

One of the commonest causes of nose and throat disease is overeating and drinking, particularly when associated with insufficient exercise. It is a con-

stant experience with every rhinologist to see patients, a day or two after some banqueting indulgence, suffering from severe acute inflammation of the nose and throat of a peculiar type, which, if frequently repeated, becomes most intractable and chronic in character. Nearly all men of sedentary occupation eat at least twice too much, and one of the many evil results is "nasal catarrh;" regular and sufficient exercise often works wonders in these cases when combined with a more scientific dietary. Another way in which properly conducted exercise acts for good in "catarrhal cases" is by its tonic action on the whole circulation, irritable hearts and weak bloodvessel systems being almost the usual condition in catarrhal patients in whom the disease is advanced and severe.

The writer has found reckless bathing to be the causative factor in a great many cases of rapidly recurrent "colds," in which treatment was otherwise very unsatisfactory. Cold plunge and sponge baths are quite the fad among young men; and while a most valuable stimulant to the *already strong*, and a necessity to the athlete in training, to the weak, and especially the "catarrhal," they are a serious danger unless taken with great caution. Water a little below the body temperature, say 90°, is much more satisfactory for cleanliness and far safer; nor is a plunge bath *ever* advisable in the winter season for persons of catarrhal tendencies, a sponge and Turkish-towel mitten being all-sufficient.

Tobacco, constitutional poison as it is well known to be, has a very doubtful *direct* effect on the breathing passages. I have never been able to demonstrate any changes produced by two or three cigars, or their equivalent, per day. Short-stemmed pipes are injurious from other causes, the hot products of combustion reaching the throat and, to a certain extent, the nose at a high temperature. Cigarettes are hurtful, because inhaled and the smoke allowed to pass through the *nostrils*; if smoked as a cigar is usually done, they are at least as harmless.

Worry and excitement often cause symptoms related to those of "hay fever" in catarrhal subjects, and many cases of nose disease are seen by specialists which can only be controlled by lessening the amount of mental strain and insisting on a more rational method of work. "Taking cold" invariably increases the chronic disease in all cases of nasal inflammation, and should be strictly guarded against. In addition to the factors already considered, the matter of clothing is of great importance. Woolen underclothing and woolen stockings of sufficient weight should be worn by everyone during the winter months, and stout-soled shoes in all weathers, with the addition of rubber overshoes in wet weather. Waterproof leather shoes are something the writer has never been able to find, and damp feet are always a serious menace to all persons of catarrhal tendency. The question of outside wraps and throat mufflers is largely a matter of individual experience or professional caprice; patients with relaxed skins and irritable circulations require an abundance of warm clothing, and the addition of a throat scarf is a decided safeguard, while others, "hot-blooded" and easily warmed, would only be injured by heavy coats or mufflers. Furs and sealskin garments are *not* adapted to the climate of New York or Philadelphia, however. Speakers and vocalists should protect them-

selves thoroughly, keep the mouth shut, and avoid all exposure as much as possible after severe vocal efforts.

The dangers of progressive nasal inflammation are quite sufficient to justify the warnings above given. The throat and voice suffer even in very mild cases, and in advanced examples the bronchial tubes, the ears and the digestion are invariably implicated. Deafness and chronic bronchitis result in a large number of instances, and various intractable headaches and other more remote maladies result from the diverse nasal diseases grouped for popular convenience under the elastic term of nasal catarrh.

It should never be forgotten by both physicians and patients that the nasal lining is the most sensitive membrane in the body, and that all experimental and ill-advised treatment is quite certain to aggravate the disease and lessen the chances of relief.

Lukewarm Baths to Restore the Waning Power of Age to Youthful Vigor.

BY JAMES E. EMERSON,
Of Beaver Falls, Pa.

I HAVE for a long time (being now past 67) suffered from muscular rheumatism, being feverish from weakness of the muscles. I had for a long time known that old people actually dry up so that the tissues become inactive. I also have known that to use a very stiff scrubbing brush vigorously would toughen the parts and clean the skin ready for absorption, through the pores, of moisture, so that, by lying in a tepid bath, with the water at from 88° to 92°, Fahrenheit, for from a half to one hour, the body would actually absorb by weight from two to three pounds of water. Benjamin Franklin, at about 60, began to feel greatly the encroachments of old age, so he went to Dr. Darwin for advice. The Doctor recommended to him the lukewarm bath, to be taken twice a week. Franklin followed this advice, and very soon noted the beneficial effects of these warm baths upon his aged body. He is said to have continued their use up to within a short time of his death, which was at 84, and to the very last was strong and vigorous in body and mind.

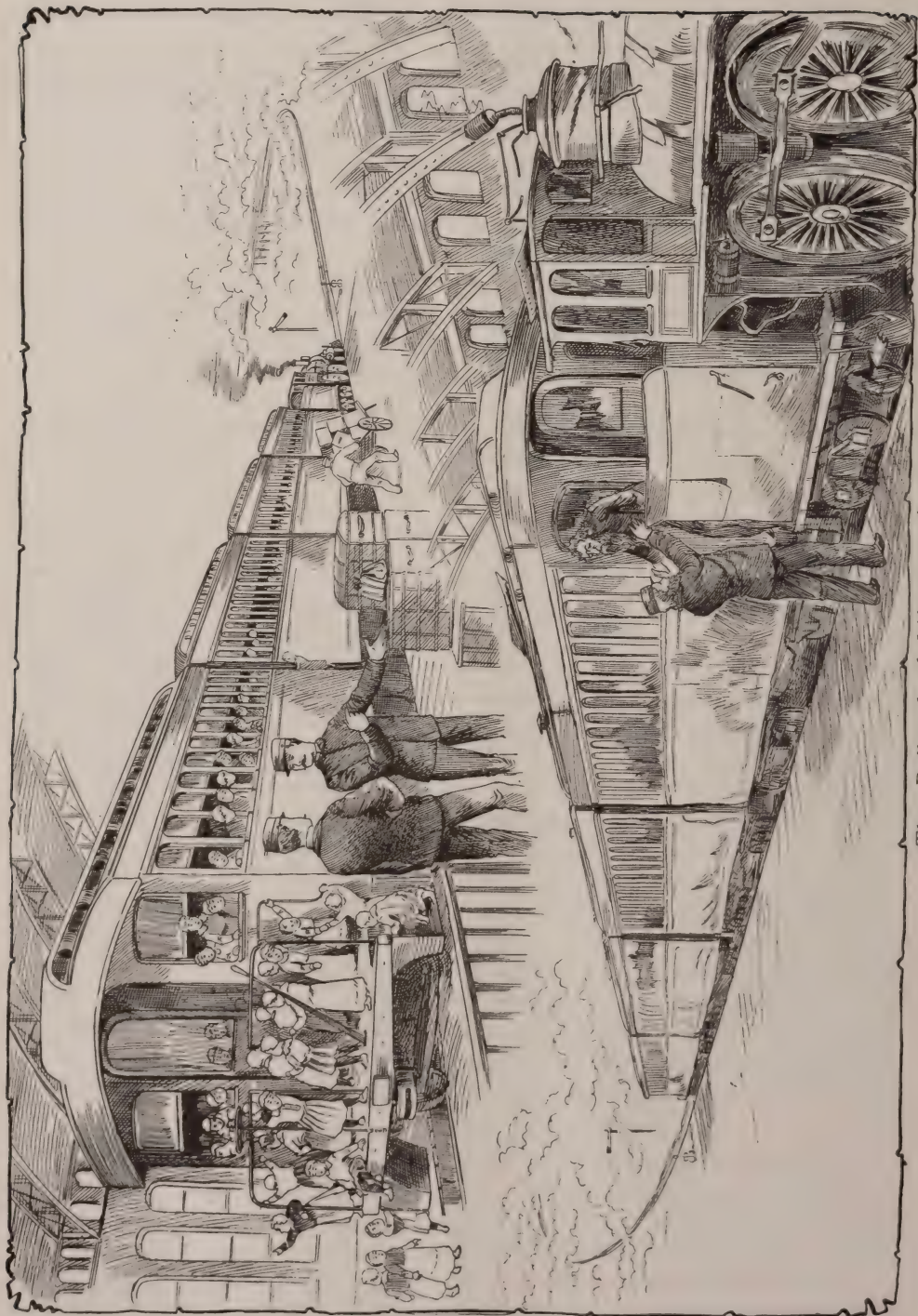
It restores elasticity and smoothness to the skin; it loosens the tissues, and thereby brings back fullness and roundness to the limbs. It prevents eruptions of the skin, and where present it removes them often even from the face. It prevents the body giving off too much heat, which enhances nutrition.

RULES FOR BATHING.

It is well to commence with these baths as soon as the first infirmities of age begin to make themselves felt between the 50th and 60th year. Two to three baths should be taken every week. As the water cools off, hot water must be added and the thermometer consulted.

The best time for bathing is the forenoon, about two hours after breakfast, or the afternoon about four hours after midday meal.

After the bath the body must be well dried and rubbed with coarse towels. Baths either too hot or too cold are dangerous to old people.



The Railroad of Life—As it is.

The Railroad of Life.

BY THE EDITOR.

ON the 1st of March, 1891, the fast express on the "Railroad of Life" leaves "Eternity Station," bearing the babies of 1891, to the number of 1000, on their journey through life.

We note the "station master" giving his final instructions to the conductor of the train, and as we listen we hear something like the following:

"You are due at this station March 1st, 1991, and, at all hazards, your time must be made. The welfare of your passengers must be a secondary consideration, your first and guiding motive being that you shall *make time*."

MARCH 1ST, 1991.

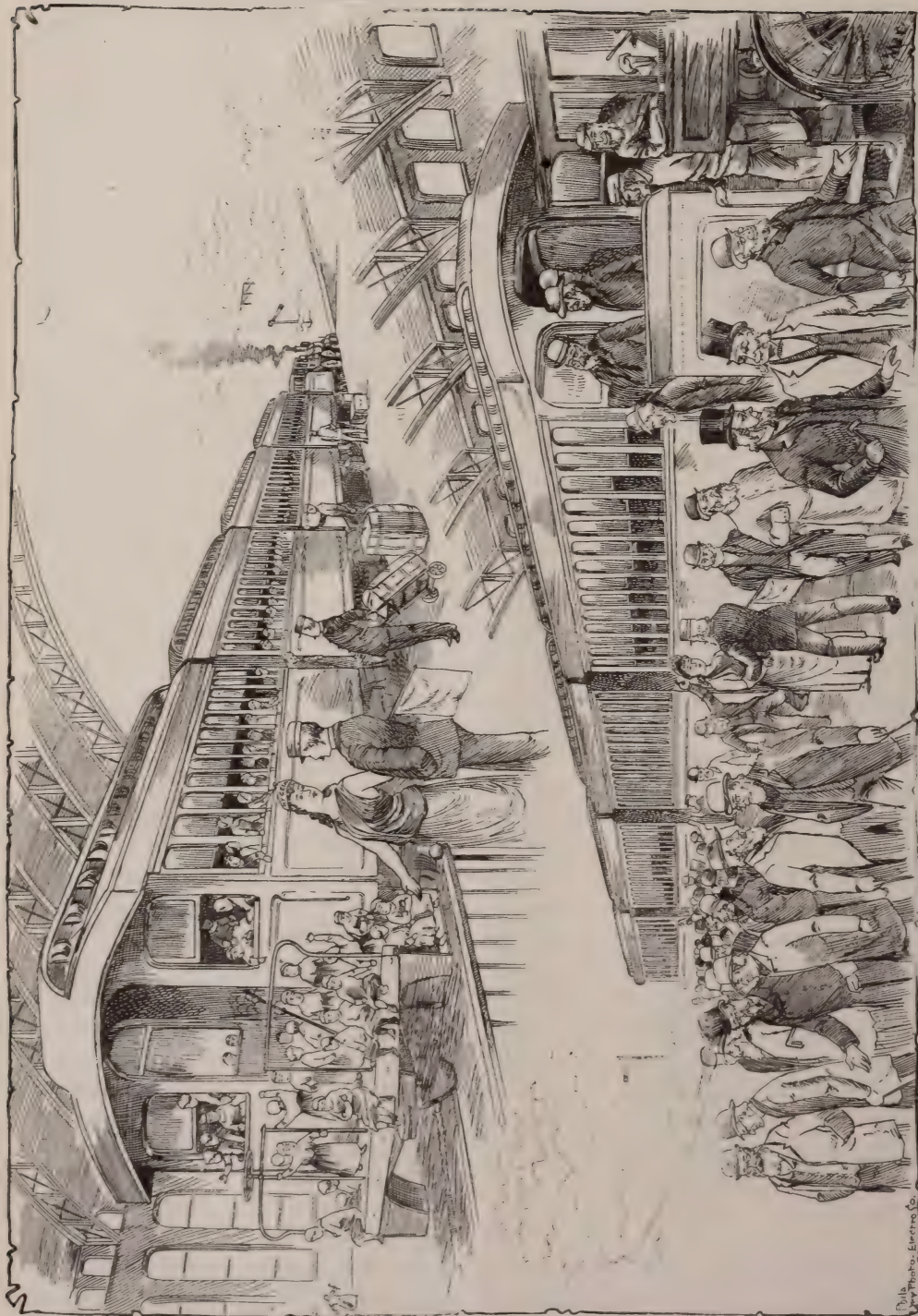
The fast express on the "Railroad of Life," completing its journey of 100 years, creeps slowly into "Eternity Station," weather-beaten, dismantled, minus engineer, firemen, conductors and brakemen, nearly steamless, and in a condition of general decay, very nearly akin to that of Dr. Holmes' famous "one-horse shay," just ready to dissolve into nothingness. From this phantom train we see the grandson of the station master of 1891 assisting one solitary, decrepit old man, *three-fourths* dead, to alight, and from him he receives this report of the journey of 100 years:

"Traveling as we did, under orders to '*make time*,' regardless of the welfare of our passengers, before we were one year on our journey we had lost 149 of our babies, and before the age of 5 years 263 of our number were missing. During the next five years we were more fortunate, and lost only 35. For the succeeding five years we were remarkably fortunate and lost only 18, but now our losses increased so that when we had been out twenty-five years our force was reduced to 634. In the next ten years we lost 62, while at the end of forty-five years our original passenger list was cut in half, and we had left of our original 1000 babies only 500 middle-aged men. At the close of the fifty-fifth year we could count but 421, while only 309 remained at sixty-five and 161 at the end of seventy-five years. When we had been out eighty-five years our engineer and conductor were counted among the missing, and only 38 tottering old men could be found in all our train. Five years ago, when we had been ninety-five years on the 'journey of life,' our train hands were all gone; the engine, nearly exhausted and worn out, was running without guidance or control, and but one poor old fellow besides myself was to be seen in all the cars. He fell off some little time after; and here you see me, the sole survivor of the 1000 happy babies that started from this station 100 years ago on the 'journey of life,' and I am only 'one-fourth alive.'"*

THE HYGEIAN TRAIN.

From the same station starts out, April 1st, 1891, a train similarly loaded, having, however, for its conductress the goddess Hygeia. It is, to a certain

* Statistics tell us that only one person out of every 4000 born reaches the age of 100 years.



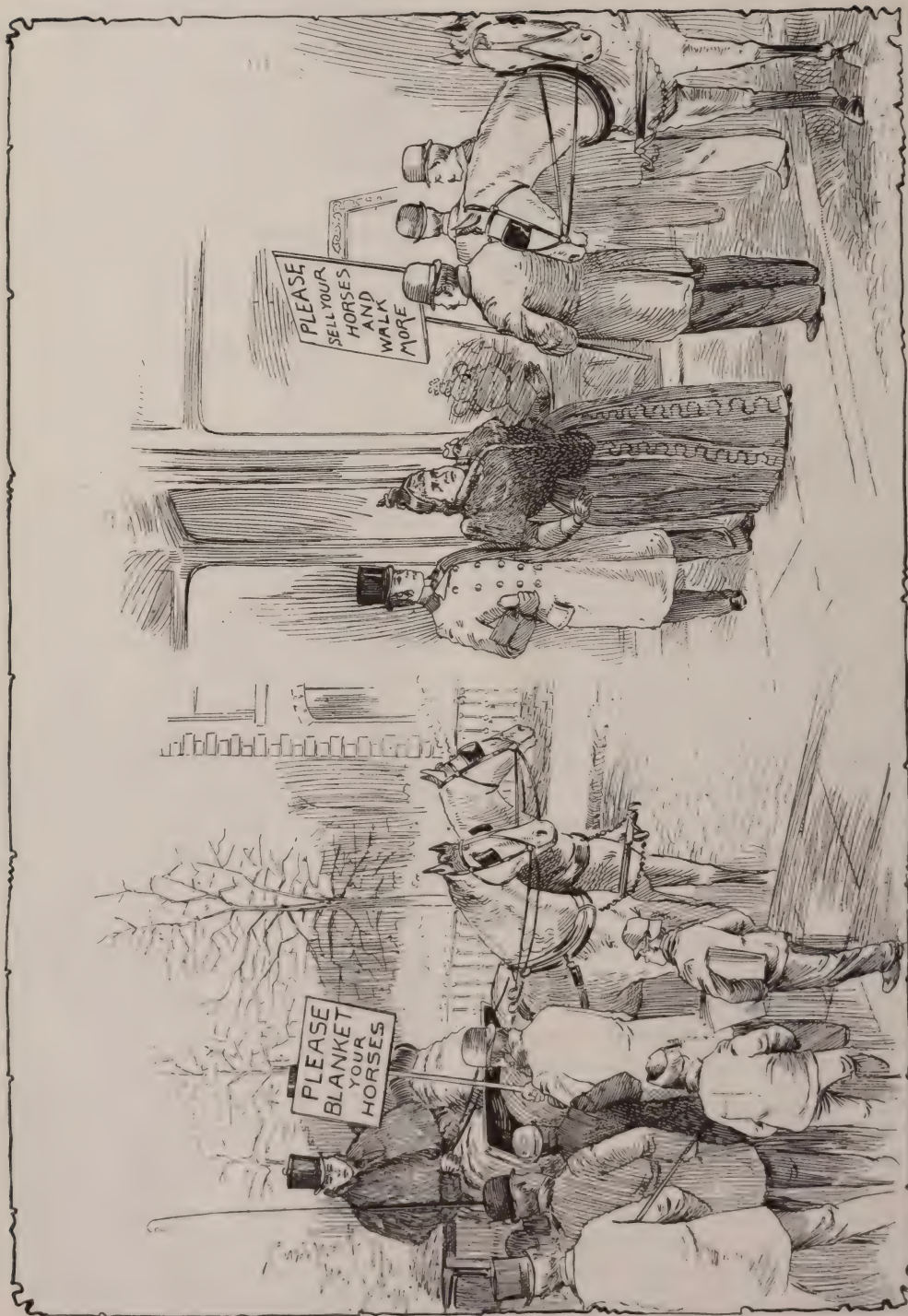
The Railroad of Life—As it *Could* and *Should* be.

extent, an experimental train, that is to say, scheduled on scientific principles, the effort is to be made to practically demonstrate that "time" can be made without sacrificing the interests and the welfare of the passengers. April 1st, 1991, this same train, smart and fresh and under the control of the same officials with which it started (now grown into grizzly veterans), steams into the station on time, and from every platform there alight hale, hearty, vigorous old men of 100 years. The number of arrivals is not 1000, but it approaches very closely to that figure; and as we notice the populace singing the praises of the conductress for her wise management of this long journey, let us all put on our "*thinking caps*" and moralize upon the meaning of these two journeys.

The Coming Elixir of Life.

BY MRS. CARY EBNER,
Of Wadsworth, Ohio.

It has been said "that in advanced civilization love and care prolong life to a great age." While this may be true in one sense, there are various ways by which people can live to an advanced age and still retain many of the faculties that are broadened and made perfect by years of experience. It has been illustrated time and again that a proper regard for the laws of health prolong life. Every day do we witness this. Lives whose early days were not "born upon the lap of luxury," but rather in the dense forest and rude cabin of the early settlers, accompanied by all the hardships with which these people were obliged to contend, accompanied by frugal simplicity of living in every detail, the only recreation being the muscular swing of the axe by day and the howl of the wolves by night. Yet, amid all this, these people were laying a physical foundation which secured to them a long and useful life. I fully believe that God meant man's days to be long upon the earth and thus enjoy His perfect work. Perhaps He views us with tender pity because of our abuse of His richest gift, the human body; as it would pain the skilled human artist, who had spent his utmost skill upon a beautiful landscape, only to find it unappreciated. The fullness of the earth was made for man. The boundless depth of hidden things was created to draw man out and exercise his wonderful mind. That man was made for work cannot be denied. It is in the full activity of body and mind that man knows his best, and in order to accomplish this he must be strong physically, mentally and morally. Man can only reach his highest attainments through a clear vision, aided by the proper use of his functions. Poets sing of the beauty, grace and ethereal loveliness of woman; but as I am not a poet, I admire the strength of mankind. I never admired the phrase that alludes to woman as being "a clinging vine." I noticed through my short journey of life that women require strength also. Oh, this grand world, filled with millions of humanity, made after "God's own image," capable of the highest degree of strength, what could we not attain under the



A Suggestion for the Reduction of Obesity.

influence of robust health ! But from out these millions of people there are thousands standing upon the brink of a precipice, which means premature death. Promising men, lovely women ; mothers are childless ; children are motherless ; broken homes ; heartaches untold ; and why ? The cause ? Impure drinking water, poor drainage, damp cellars, unventilated houses, over-excitement, intoxicants, tobacco, high-heeled shoes, the correct-fashions folly, overfed stomachs, poisonous candy, adulterated food, the HOG, etc., etc. Can we study this list and yet fail to understand why so many find untimely graves ? Our work, not God's. Oh ! woman, you have a power greater than franchise. You forget that you hold a reformation in your hands. You can mold the physical, mental and moral forces of your children and thus make them strong men and women. In your clamor after the ballot you forget the influence you already possess. You call yourselves down-trodden. American women down-trodden ? You have a power, if prudently used, that will settle " woman's rights " most effectually. The first care of mankind has been given to woman. The babe was placed within her arms. From her it learns the first lessons of life ; to her it looks for protection in its helplessness. She can make or mar its life, plant the seed that will send it to a premature grave, or field it for a long and useful life. People talk of the millennium, yet they do not instruct us with the best mode to secure that perfect existence. It is safe to believe that nine-tenths of the crime with which the world is cursed comes from the reaction of a diseased mind. Socialism, communism and anarchism are the hallucinations of diseased minds, for only lunatics will advance ideas that are so detrimental to human welfare. We all know how differently the world and people appear to us under the balm of health, how soon a song will come to our lips, and everything seems well. Cheerfulness in place of moroseness. The next elixir-of-life craze will not be to make decrepit old men young, but will teach them how to remain young. And when old age does appear it will come so happily through the consciousness of a life well spent, and be crowned with so much glory that the change from life to death will be a blissful step.

A Proposed "Society for the Prevention of Cruelty to Human Beings."

BY THE EDITOR.

THE Massachusetts "Society for the Prevention of Cruelty to Animals" has adopted a most ingenious and effective method for carrying out a most important item of its mission. The principal streets of Boston are now patrolled by men bearing banners on which are inscribed, "Please Blanket Your Horses." Seeing a fashionable equipage drawn up in front of a fashionable store, and the horses standing in the cold, minus blankets, the agent of the society plants himself and his sign in front of the horses. It takes but a few minutes for a crowd to collect. When the mistress of the horses emerges from the store and *waddles* toward her carriage, the crowd attracts her attention. Looking up, she reads

the suggestive placard. At first surprise, indignation, resentment are the mastering emotions, but soon common sense and humanity are in the ascendancy; imperative orders are given to the coachman, and these particular horses are never again seen on a cold day without blankets. What an admirable method is this for accomplishing that most praiseworthy work of caring for that portion of the animal race unable to care for itself. But, admirable as it is and deserving of all possible sympathy and support, does it not seem that we should make some similar effort to care for those animals of a higher class, who, while able to care for themselves, yet through ignorance or carelessness fail to do so. We would suggest that, in company with the placard already mentioned, a man be sent about our streets suggesting to these fat "American Dowager-Duchesses," whose livers are veritable "*pate-de-foie-gras*," that they should dispose of their luxurious equipages and resort more to the means of locomotion that has been furnished to them by nature.

The inactive, passive, indolent existence of luxury and, we might also add, of gluttony, that is indulged in by our rich women of 50 years of age and over (the class who use horses and carriages) is most favorable for the production of fatty degeneration of the vital organs and is most prejudicial to health. If it be necessary that one must own a fine "*establishment*" in order that she may be regarded as a person of fashion and wealth, let it be so; but let her (after having placed her monogram conspicuously all over the harness and carriage, so that the ownership may be unquestioned) place her equipage at the disposal of *her worst enemy* and do her own traveling by foot.

Sanitation in the Bible.*

BY H. P. CAMPBELL, PH.G.

IN the rooms of the Sanitary Institute of Great Britain there is a series of portraits of men who have been leaders in sanitary reform. What attracts most attention here is the fact that foremost among them we find Moses, the law-giver to the Jews. At first almost anyone would think the picture misplaced, as all our impressions of him are those of a religious and military leader. Our present ideas of sanitation have been brought into public notice within so few years past, that one involuntarily credits this century with most of its important discoveries. While this is true in regard to many of the details, we find that the leading principles can be traced back over 3,000 years, and probably were known even earlier than that. An examination of the Mosaic law shows that its sanitary regulations are fully equal to, and even in advance of, those now in use in our most civilized countries. Being intended for an uneducated race, the directions, as a rule, are very minute, and having been so carefully preserved, we can gain a very complete idea of their purpose. The results are

* From the *Pharmaceutical Era*.

apparent all through the after-history of the Jews, who have been noted for their freedom from epidemic diseases, especially when all other races were decimated by the plague in the Middle Ages. This was so noticeable that at the time they were accused of using sorcery and witchcraft to drive away sickness. Without doubt they had little idea of the reasons for many of their laws; but their tenacity of ancestral custom was so great that those rules were carried out as faithfully as they could be, while the customs of the nations among which they lived were so entirely different.

Egypt, in Moses' time, was the most highly civilized nation of the world, and here he received his education. Many Egyptian customs and laws were thus grafted on those of the Jews themselves, especially in regard to cleanliness. The priests in Egypt were very particular in this respect, the most scrupulous cleanliness of person being required, to correspond with their white linen robes of office. With such a training, it would be only natural for Moses to inculcate principles opposite to those prevalent among most other orientals. Even at the present time travelers find more fault with the dirty and frequently filthy habits of the people than with any of their other traits. As they are more or less improved from their present frequent contact with Europeans, we can imagine their condition at that early age, and the care required to frame rules that could be carried out. Sanitation in the warm climate of Palestine is far more necessary than at this distance from the equator, and, of course, more difficult to enforce among an uneducated people. How well these were suited to the conditions we shall see by reviewing them.

Everyone suffering from a contagious disease, or who had in any way been rendered "unclean," either by exposure to infection, or from any other cause, was to be separated from the rest of the people until he had been purified. "Command the children of Israel that they put out of the camp every leper, and everyone that hath an issue, and whosoever that is defiled of the dead—that they defile not their camps."* All contact with the dead, or even being very near them, was considered as especially defiling. "This is the law when a man dieth in a tent: all that come into the tent and all that is in the tent shall be unclean seven days. And every open vessel that hath no covering bound upon it is unclean. And whosoever toucheth one that is slain with a sword in the open fields, or a dead body, or a bone of a man, or a grave, shall be unclean seven days."† The emphasis made by going so deeply into details was doubtless intended to impress on their minds the great danger attending the putrefaction of corpses. This was directly antagonistic to the Egyptian practice, where great care was always taken to preserve the bodies of the dead, and frequent visits paid them on this account. These visits would be the more dangerous on account of the bodies being placed in sarcophagi and rock tombs, where there was no soil to absorb the poisonous gases.

After return from battle, they were to "abide without the camp seven days; whosoever hath killed any person, or whosoever hath touched any slain, purify

* Numbers, 5: 2-3.

† Numbers, 19: 14-16.

both yourselves and your captives on the third day and on the seventh day.”* The liability of the soldiers being exposed to contagion on any foreign expedition was very great, and adding to this the liability to sickness from fatigue, exposure and irregular dieting, we can readily see the wisdom of this measure. The detention apart would prevent their infecting other persons, and give time for any disease they might have contracted to manifest itself. The purification required on the two days was the thorough washing of themselves and of their clothes.†

Merely touching the body of an unclean animal also constituted uncleanness. “And everything whereupon any part of their carcass (unclean beasts) falleth shall be unclean ; whether it be oven or ranges for pots, they shall be broken down. Nevertheless, a fountain or pit, wherein there is plenty of water, shall be clean.”‡ Here we see an old form of our modern axiom, that “running water purifies itself,” which apparently was understood then. Water was freely used by the Jews for purification, especially so for a country where water was so scarce, the inhabitants depending to a great extent on rain water stored in cisterns for their supply. In the time of Christ we find that in a Jewish house “there were set six water-pots of stone after the manner of the purifying of the Jews, containing two or three firkins apiece.”§ This would make the capacity of each about twenty-five gallons, or very nearly a barrel.

Their method of disposing of garbage would also be a vast improvement on that pursued by most of our large cities. No human excreta was to be left in the camp, but was to be immediately buried in the earth outside the limits,|| where it would enrich the soil instead of poisoning the people. All refuse from the slaughter of animals was also to be taken outside the camp “where the ashes were poured out” and buried.¶ When we compare this with the modern method of taking the manure away from the soil it benefits and throwing it into the streams it injures, it is an easy matter to decide which plan is wiser and better.

Contagious diseases also received their due share of attention. Leprosy being the most common disease of this class that it was necessary to deal with in Palestine, their method of treating this will serve to show their knowledge of the subject. Minute rules were given by which it could be distinguished from other skin diseases having a similar appearance. After any person was found to be infected he was to be entirely separated from all except his own class, “and the leper in whom the plague is, his clothes shall be rent, and his head bare, and he shall put a covering upon his upper lip, and shall cry Unclean, Unclean. He shall dwell alone ; without the camp shall his habitation be.”** It is now well known that the sputum of consumptives is highly contagious, and does this mean that it was known at that time ? This covering suspended from the upper lip would act as a sort of strainer to retain any bacteria in the breath, and prevent any other person that should happen to be near from inhaling them. They were also to keep away from human habita-

* Numbers, 31 : 19.

† Deuteronomy, 23 : 13.

‡ Leviticus, 15 : 10.

§ Leviticus, 4 : 11-12.

|| Leviticus, 11 : 35-36.

** Leviticus, 13 : 48.

‡ John, 2 : 6.

tions as well as from their people, and so rigorous was this quarantine that lepers breaking it were to be stoned. Before allowing a healed patient to return to his usual habitation, he was to carefully cleanse himself and his clothes. "He that is to be cleansed shall wash his clothes, and shave off all his hair, and wash himself in water that he may be clean."* After seven days the process was to be repeated, specific directions being given to remove every particle of hair, even to the eyebrows. A smoothly shaven surface would furnish no lurking places for contagious germs, while one covered with matted hair would.

Garments supposed to be infected were also treated with like care. If a spot was noted in it, the garment was to be shut up for seven days, and at the end of that time critically examined once more. If the spot had spread any, it was infected and was to be burned, "whether it was in the warp, or woof, of linen, or of woollen; whether in a skin, or in anything made of skin."† However, if the spot had not spread any the article was to be washed, and if the spot did not reappear, was considered clean. But if it did reappear, the entire garment was to be burned.

The treatment of infected houses is also very instructive. "Then the priest shall command that they take away the stones in which the plague is, and they shall cast them into an unclean place without the city. And he shall cause the house to be scraped within round about, and they shall pour out the dust that they scrape off without the city into an unclean place; and they shall take other stones and put them in the place of those stones; and he shall take other mortar and shall plaster the house."‡ If the plague reappeared after this thorough cleansing, "he shall break down the house, the stones of it, and the timber thereof, and all the mortar of the house; and he shall carry them forth out of the city into an unclean place."§ These instructions sound very much like those of health authorities of the present day, cleaning and white-washing the walls being the standard remedies in purifying infected houses. Chemical disinfectants were probably unknown, but nature's great cleansing agents, fire and water, were used instead. All spoil taken in battle was to be disinfected by one or the other of these agents. "Everything that may abide the fire, ye shall make it go through the fire, and it shall be clean; and all that abideth not the fire, ye shall make go through the water."||

Women after childbirth, and persons suffering from an issue of blood or a running sore were also to be kept apart. Anyone even touching anything that the patient had been in contact with was to "wash his clothes, and bathe himself in water, and be unclean until the even."¶ Another thing noteworthy in connection with this class of diseases is that after the patient was cured he was to "wash his clothes, and bathe his flesh in *running* water.** Bathing in a stream would insure a more thorough cleansing than ordinary, and remove the contagion from the neighborhood of dwellings.

Diet also holds an important place in the Mosaic law, as an injudicious diet

* Leviticus, 14 : 40-42.

† Leviticus, 14 : 8.

‡ Leviticus, 14-45.

§ Leviticus, 15 : 10.

|| Numbers, 31 : 23.

** Leviticus, 15 : 13.

¶ Leviticus, 13 : 45-46.

might easily overbalance the best of habits in other respects. All animal life was divided into two great classes, clean and unclean. All "clean" ones could be used as food, but the "unclean" were strictly forbidden. This distinction seems to be very ancient, even going back to the time of Noah. He was to take in the ark "of every clean beast—by sevens, and of beasts that are not clean by two."* Every animal was "clean" that "parteth the hoof and cheweth the cud,"† and all others were forbidden. This allows the use of most of our common food animals, like cattle, sheep, etc., swine being the most important exception. Even in this colder climate, pork is no great favorite with sanitarians, because of its difficult digestibility, and its liability to parasitic diseases. Even in this country, where the newspapers are so widely read, people persist in eating raw pork, after being warned again and again, and deaths are by no means infrequent from this cause. It is probable that their habit of feeding on all sorts of refuse renders swine especially liable to this class of diseases, and while these parasites seem to have little effect on themselves, when taken alive into the human stomach, frequently produce fatal results. Probably from this same habit of living on carrion, all beasts and birds of prey were forbidden, as well as creeping things, eels, etc.‡ Among insects, locusts and grasshoppers are exceptions,§ their food being green vegetation of all sorts, as farmers in all ages have learned to their sorrow. These are said to be still used as food in some oriental countries.

All meat was to be bled before using, blood being absolutely forbidden. This again dates back to the time of Noah. "But flesh with the life thereof, which is the blood, shall ye not eat."|| The same command was reiterated again and again to the Jews themselves. "Whatsoever man hunteth and catcheth any beast or fowl that may be eaten; he shall even pour out the blood thereof, and cover it with dust."¶ "Ye shall eat no manner of blood, whether it be of fowl or of beast."** This would not only teach the sacredness of life, but also keep the meat longer from decomposition by removing the readily putrescible blood.

All diseased animals and those killed by wild animals were likewise forbidden. "That which dieth of itself, or is torn with beasts, he shall not eat to defile himself therewith."†† "Neither shall ye eat any flesh that is torn of beasts in the field; ye shall cast it to the dogs."‡‡ While thus strictly forbidden as human food, they could be put to other uses, showing that no mere ceremonial distinction was intended. "And the fat of the beast that dieth of itself, and the fat of that which is torn with beasts, may be used in any other use; but ye shall in no wise eat of it."

Of late years there have been so many different diet lists prepared, why does not some physiologist give us one drawn in accordance with above rules?

* Genesis, 7 : 2.

† Deuteronomy, 14 : 6.

‡ Deuteronomy, 14.

§ Leviticus, 11 : 22.

|| Genesis, 9 : 4.

¶ Leviticus, 17 : 13.

** 7 : 26.

†† Leviticus, 22 : 8.

‡‡ Exodus, 22 : 31.

School-Room Ventilation.

BY GEORGE G. GROFF, M.D.,

Of Lewisburg, President of the State Board of Health of Pennsylvania.

FOUL air produces listlessness in schools perhaps more than any other one cause. *Beware of it.*

"In modern hygiene, nothing is more conclusively established than the fact that vitiated atmospheres are the most fruitful of all sources of disease."—*Playfair.*

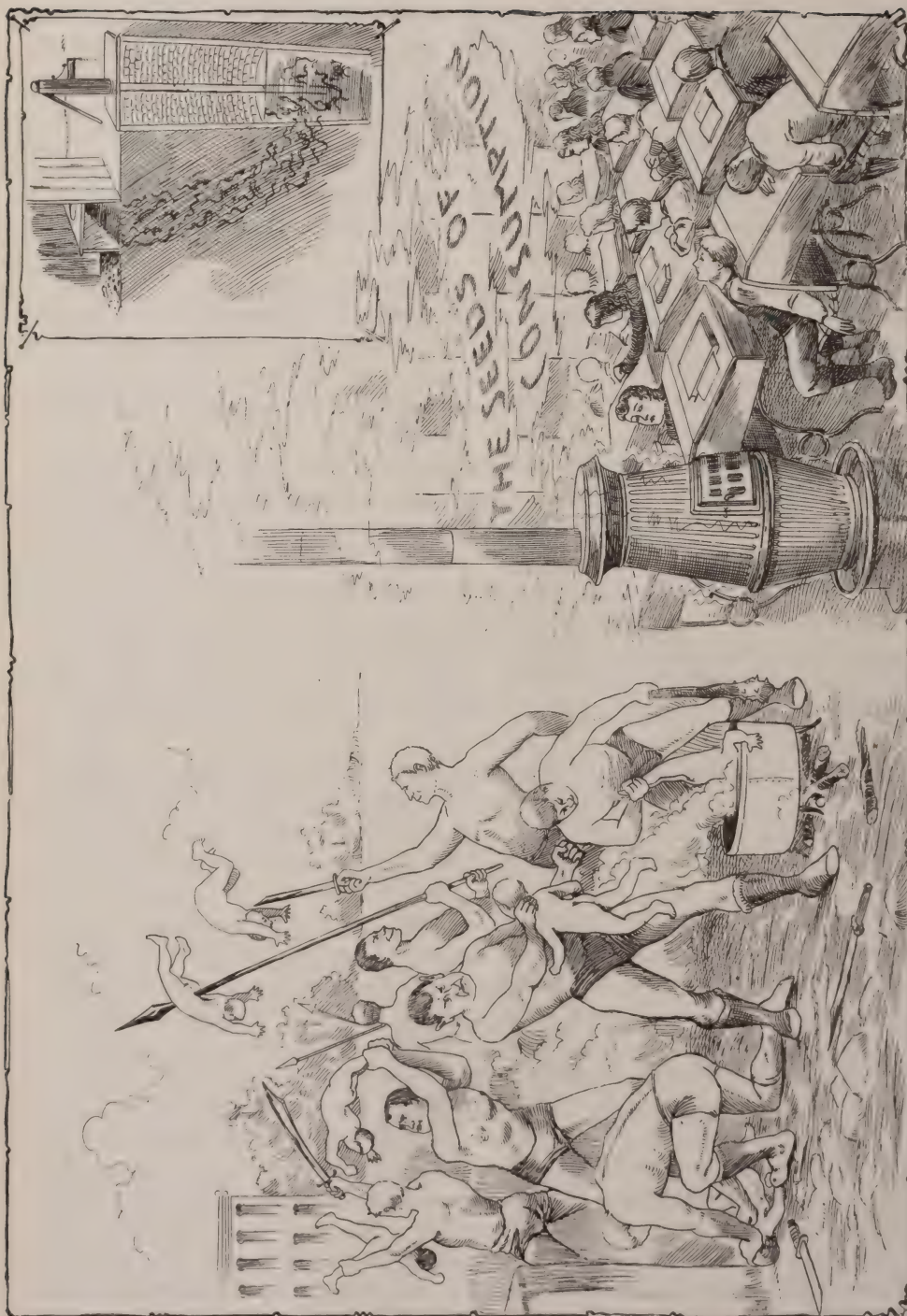
"Headache, nausea, and lassitude, great debility, impaired digestion, severe colds, consumption and other diseases of the respiratory system, as well as other serious diseases, may be caused by confinement in the foul atmosphere of an un-ventilated room."—*Dr. Frank Wells.*

"Though foul air is a slow poison, we must not forget that a blast of cold air may slay like a sword."—*Dr. Angus Smith.*

The air in the school-room should be pure and warm, but not overheated. *Perfect* ventilation is secured when the inside air is as pure as that outside. The only way to determine the temperature of a room is by means of a thermometer, which should not be hung more than four feet from the floor. It should occasionally be placed near the floor, to see that that portion of the room is not too cold. The proper temperature is from 65° to 70° F. Children who complain constantly of being cold are probably ill-clad or need more physical exercise. Try to keep the floor warm. A zinc cylinder about the stove will protect those near it. Keep a vessel of water on the stove to moisten the air of the room.

It is reported that many teachers do not know how to manage a coal fire properly, and that school-rooms frequently contain injurious amounts of coal gas. *When the stove door is opened, have the smoke flue or pipe free so that the smoke and gas will have active escape. Watch closely that gas does not escape into the room, as it is a cause of dullness and headache.*

An open fireplace with a small fire burning in it is the best means of ventilating a room yet devised. A ventilating flue to act must be warm, otherwise it will probably only be a funnel down which cold air will pour into the room. Windows should not be lowered in cold weather when a draught of cold air may fall upon the head of any pupil. Much fresh air may be introduced into a room by placing boards about six inches wide under the lower sash of each window in the room. A space will be formed between the two sashes where they come together at the middle of the window, through which a stream of air will enter the room. Another plan is to have a cylinder of zinc inclosing the stove. A hole is made in the floor underneath the stove, and from this hole a piece of stove pipe leads to the external air. The air about the stove will become heated and will arise, while to take its place a constant stream of air will pour into the space about the stove from outdoors. This air will be warmed before it passes into the room. It will be well for the teacher to have *fixed times on the daily programme* at which to throw open doors and windows several



The most Economical Way to
Dispose of our Children.

THE MODERN "SLAUGHTER OF THE INNOCENTS."

A more Expensive but Equally
Effective Way.

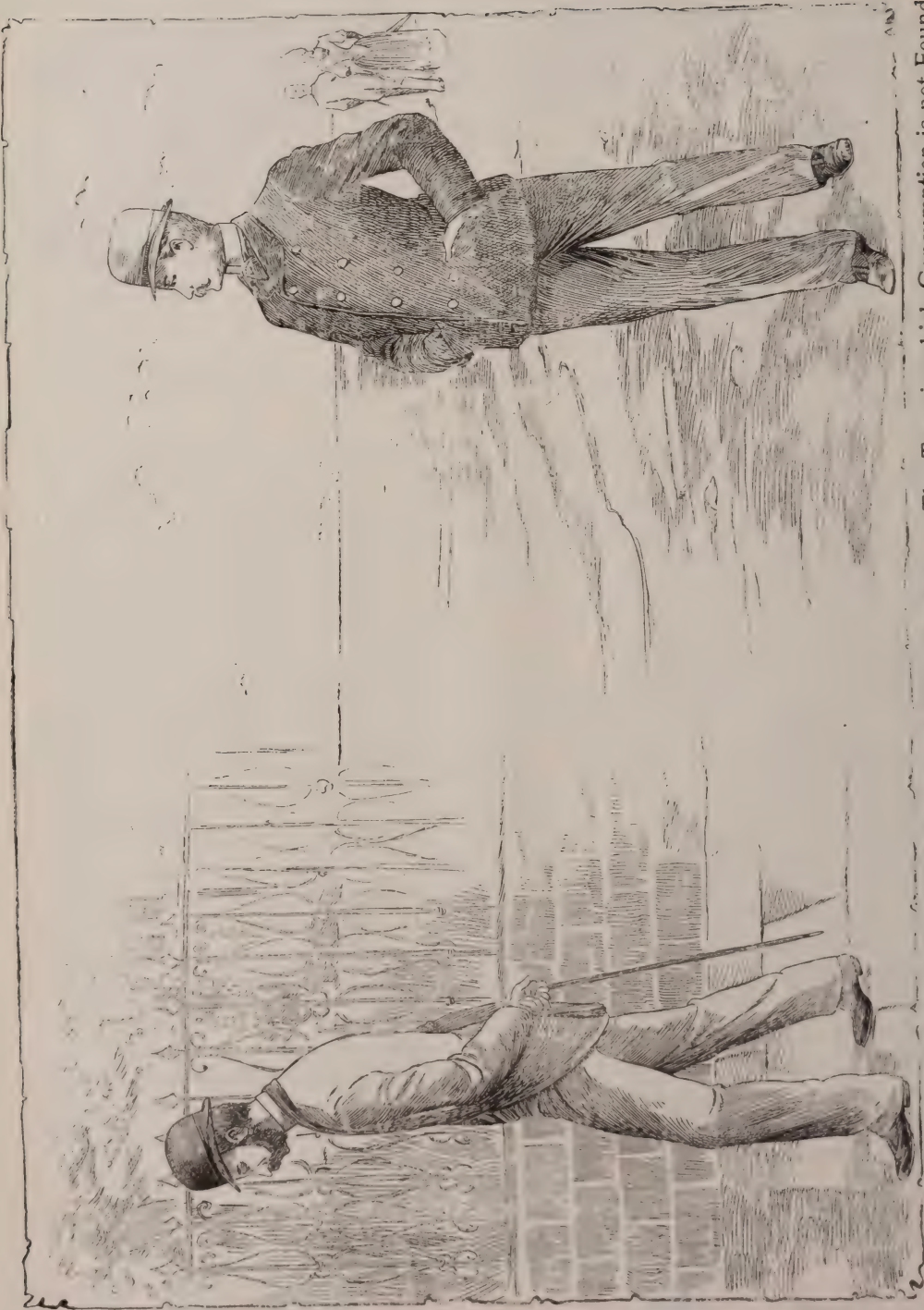
times each day, that all the stagnant air in the room may be removed. At these times all the children should be on their feet and exercising, and the windows should be closed some minutes before the children take their seats, in cold weather.

The Modern "Slaughter of the Innocents."

BY THE EDITOR.

IF an edict were to go forth, as in the days of Herod, for a universal and indiscriminate massacre of our little darlings, the world would stand aghast at the barbarity and brutality of the command. Yet, from the standpoint of *national economy*, such an order would be not only wise, but eminently justifiable.

A recent writer, commenting on the bad conditions of our schools, so far as ventilation and general sanitary conditions are concerned, very truly and wisely says that he objects to this underhand way of disposing of our children as being against the true principles of national economics. If they are to be got rid of this should be done at birth, just as with superfluous kittens. It is no good to wait until they are eight, ten, twelve or fourteen, when a lot of money has been expended on them, and then to send them out of the world by cold draughts and vitiated air. Has this thought ever suggested itself to our readers? Has it ever been realized how really "Herod-like" we unconsciously are when we subject our offspring to the death-poisoned atmosphere of an average school-room? The answer need not be made that "children must be educated." We know that fact already, and are prepared to admit it. But we also know that it is just as easy to have *sanitary* as *insanitary* school-rooms. How? By the display of common sense. Let the people demand it, and we will have them. Let the people place intelligent persons, endowed with "common sense," in control of the schools and let public opinion loudly proclaim that it is not desired, nor will it be tolerated, that these school-rooms shall be the tombs of our children, and the reformation will rapidly begin. Too much condemnation is impossible for very many of our private schools in this city, and the same rule, we are sure, holds good elsewhere. Let us earnestly beg the parents of America to photograph firmly upon their minds the picture which we present, and reflect upon it until their mental lethargy is roused into a determined effort to rescue the lives of their boys and girls, those whom they have so carefully reared from infancy, from the *death-traps* in which so much of their time is now passed.

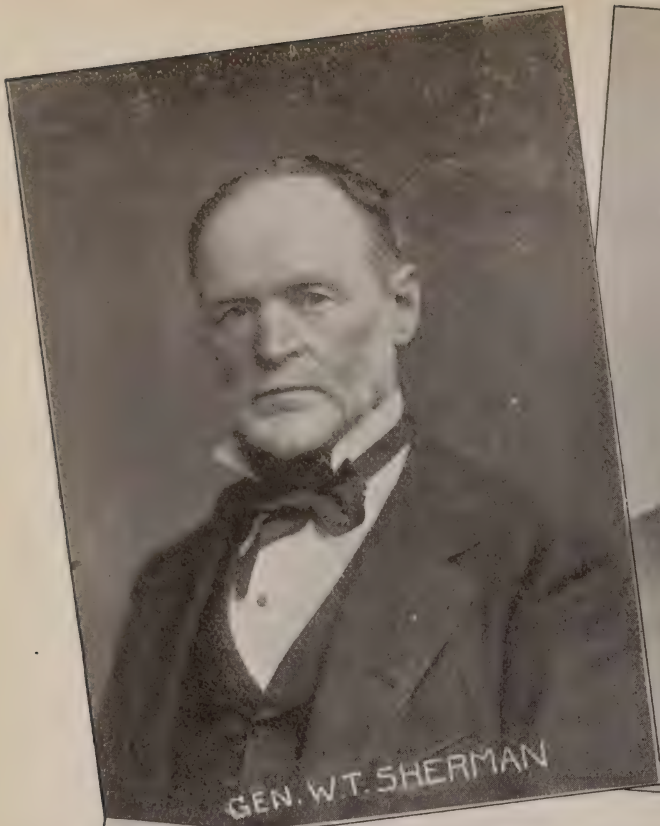


The Consumptive Type. TWO TYPES OF MANKIND. The Type in which Consumption is not Found.

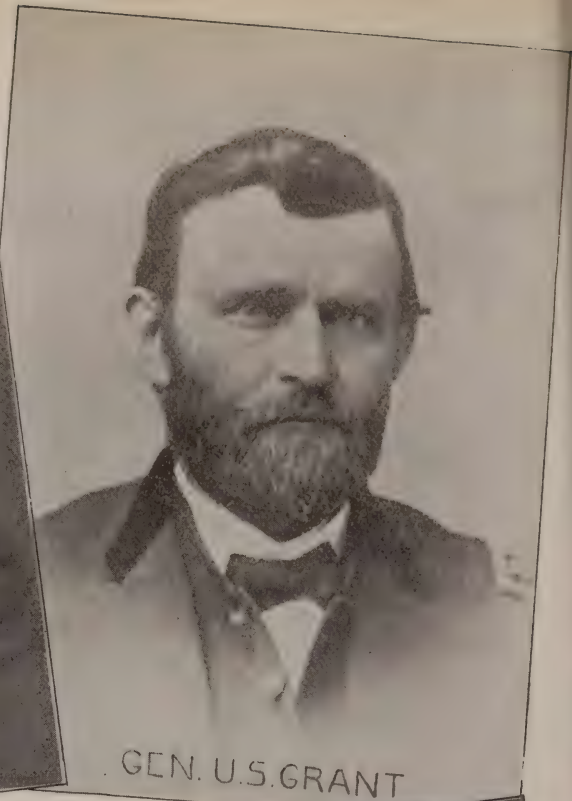
The Prevention of Consumption.

BY THE EDITOR.

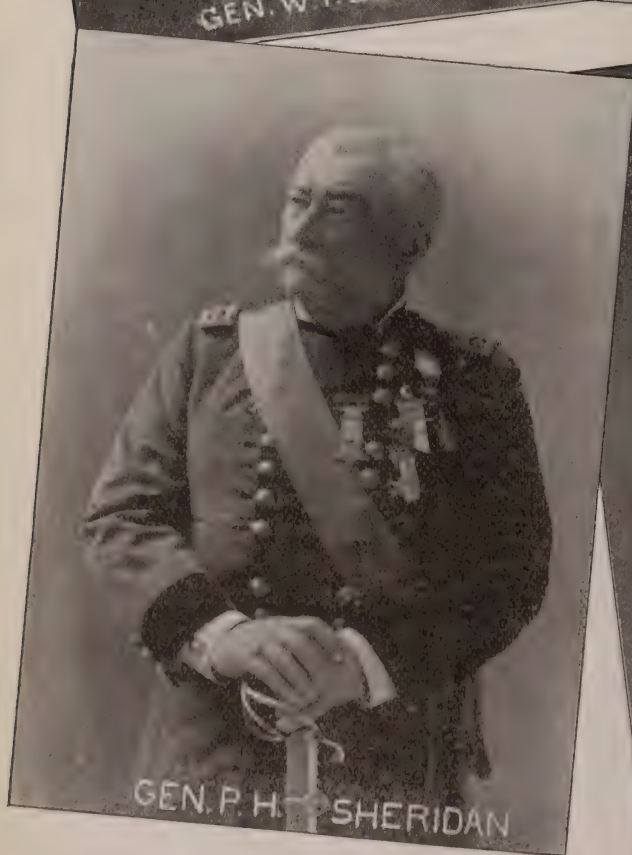
IF the farmer wants his corn to grow, he first pulverizes his soil, adds manure thereto, plants his seed, and then allows it to germinate. If he were to keep on pulverizing the soil the seed would not grow ; that is to say, if he were to rake and drag and scrape the ground the seed would not sprout ; a period of quietude is necessary that growth may begin. After the stalk appears above ground, he cultivates it ; that is to say, he hoes away the weeds that the corn may not be choked ; but he is careful not to touch the stalk itself, for quiescence is necessary to its growth. Very similar is the growth of consumption. It is the quiescent lung that furnishes a soil suitable for the growth of the seed of consumption. It is the lung that is not *hoed* and raked and agitated by full and deep respiration that is *consumed* by *consumption*. It is the hollow-chested, round and stoop-shouldered individual, whose lungs are never fully inflated, who falls a victim to consumption. Granting, for the sake of argument, that it is (as claimed by Koch) a specific, particular bacillus, or seed that causes consumption, we must believe that this seed is omnipresent, and so believing, it seems to us, practically, a hopeless task to aim at its destruction either within or without the body. Such being the case, what can we do to prevent consumption ? So modify the soil (the lungs) that the seed will not germinate when deposited therein. But how ? By agitation, so to speak ; by breathing exercise, by forcible inspiration, by full expansion of the lungs, by cultivating a *chest* such as is possessed by the young man in our illustration, who does not belong to the consumptive type. *Throw your shoulders back and draw in through your nose all the pure air that it is possible to do, elevating the chest thereby, so that you are increasing its circumference ; do this, not once, but many, many times daily, until you have cultivated and acquired the habit of deep and correct inspiration, and when acquired, persevere therein throughout life.* Here in these italicized words you have the true, rational, common-sense prevention of consumption, and the most potent means for its cure, when it is curable. Do not forget, however, that those words really mean what they imply ; by *pure* air we really mean *pure* air, and by expansion of the chest we mean that, if before commencing these inspirations one measures and finds that the circumference of his chest is 33 inches, he shall find it gradually increasing, until it becomes 35, 36, 38 or even 40 inches. By persistency we do not mean that one should so inspire for a week, or a month, or a year, but for *the whole lifetime*. At first such forcible respiration may be an effort, but it will soon become natural and easy. Of course, this simple, homely means for the prevention of consumption is not nearly so sensational as some that have been announced, but we assure our readers that it will prove much more efficacious.



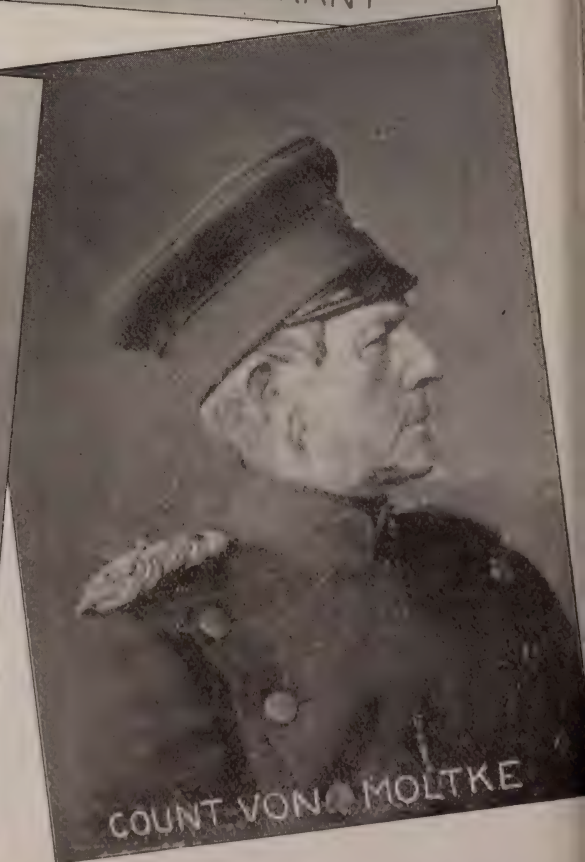
GEN. W.T. SHERMAN



GEN. U.S. GRANT



GEN. P. H. SHERIDAN



COUNT VON MOLTKE

General Sherman, dead at 70.
General Sheridan, dead at 56.

General Grant, dead at 63.
Count Von Moltke, alive at 90.

Sherman and Windom versus So-Called Fossils.

BY THE EDITOR.

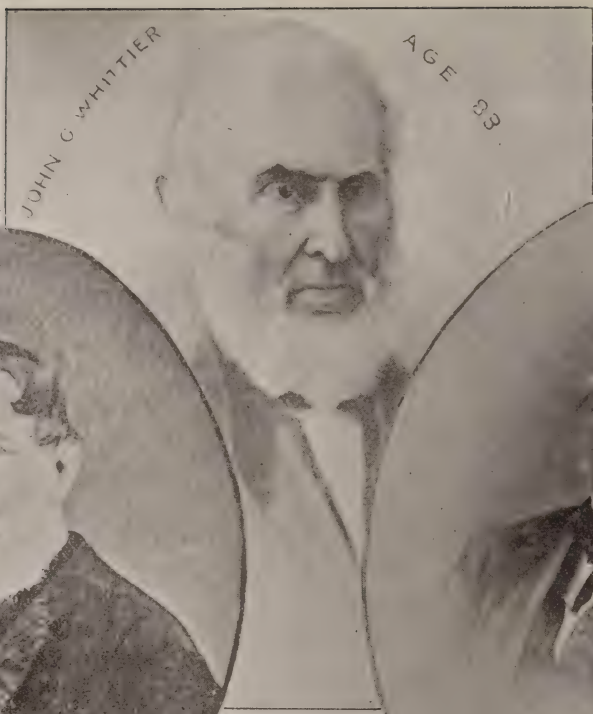
If the chief engineer of the Pennsylvania Railroad allows the "New York and Chicago Limited" train to commence its journey with a worn-out locomotive, it is pre-evident that disaster will ensue before the destination is reached; yet this very same locomotive may do valuable service for many years if placed on some local division, where short runs and frequent rests and care will make less strain upon it.

Precisely the same rule may be applied to the human being who has reached 60 years of age. The vital power of a person of 60 may be ample to carry him



HON. WILLIAM WINDOM,
Late Secretary of the Treasury.

to 90 or 100, provided he properly cares for it; but if he lives as he did at 40, he is liable to "*stop running*" at any moment. Disregard of this absolute law has, since our last issue, caused the loss to this country of two eminent men, General Sherman and Secretary of the Treasury Windom—neither of them reckless men, yet they are both now dead, because at 71 and 65 years of age respectively they persisted in doing that which at 40 years of age they could have done with impunity. A man of 65 with an unsound heart, who attends a banquet, with all the necessary excitement incident thereto, and increases this strain by the effort of making a speech to a great multitude is like unto the man who strikes a match in a powder magazine, and if he be blown into eternity it is only what we have a right to expect. Such was the case with Secretary Windom. If a man of 71 will persist in attending banquets, going out of

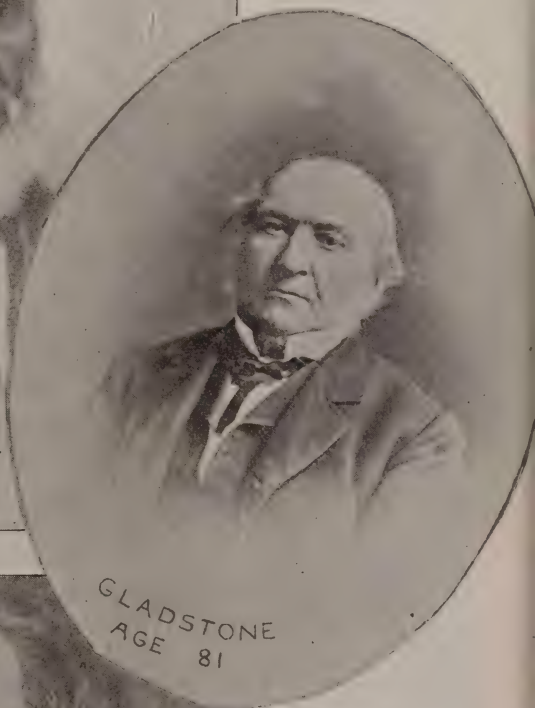


JOHN G. WHITTIER

AGE 83



KOSSUTH
AGE 98



GLADSTONE
AGE 81



TENNYSON
AGE 81



DR. W. HOLMES
AGE 81



DE LESSEPS
AGE 85

nights, and, in general, living as he did at 40, then we have every reason to look for disastrous results. Such was the case with General Sherman. We may accept it as a rule, that a mode of life, harmless at 40, will kill at 70 ; and while we note some instances wherein such is not the case, we must regard



MARSHAL Mc MAHON
ALIVE AT 82.

them as the exceptions that go to prove the rule. The person of 60 is losing the elasticity of youth ; his bloodvessels are more brittle, his digestive powers less vigorous, the action of his heart less powerful. In a word, his vital force (which may be summed up as the power resulting from his various functions) is, while all-sufficient, yet less vigorous. While sufficient to meet all the ordi-



POPE LEO XIII
ALIVE AT 80



CARDINAL NEWMAN
DIED AT 86



CARDINAL MANNING
ALIVE AT 82

nary requirements of life, it is not equal to unusual demands. Like the ship at sea that has sprung a leak yet sails placidly along, while the pumps hold out and fair weather is enjoyed, yet founders in the first gale, so the man of 60, while well able to become a centenarian in peace and quiet, yet may be swept away by the first excitement.

Of course, there are two sides to this question. Some will say that they would rather die than become *fossilized*: but we ask, were Bancroft and Cardinal Newman fossils? Are Leo XIII, Kossuth, De Lesseps, Cardinal Manning, Von Moltke, Oliver Wendell Holmes, John G. Whittier, Marshal McMahon, Gladstone and Tennyson, *fossils*? Do their portraits look as if they are? If so, then we must confess to the utmost respect and admiration for *fossils*. Rather would we say that these men are unusually endowed with that *rarest* of senses—"common sense"—which we think may be defined as the "having all our faculties under control, and using them for the best interest of ourselves and others." Will anyone claim that these splendid old gentlemen did not and do not enjoy life? Yet they have all long since abandoned "*through runs*," and confine themselves to *local divisions* with *short runs*, *many rests* and low speed. They do not subject themselves to high pressure as once they did, but slowly, peacefully, happily, contentedly and under "*low pressure*," they have and are rounding out their journey through life.

In conclusion, that we may give our readers an idea to grasp, we would say that a person of 60 who does not materially modify his life of 40, so as to avoid all excitement, to *live slowly* and to have lots of rest, is doing himself an injustice that is likely at any moment to have a fatal termination. In an editorial on General Sherman, *The Press*, of this city, very truly says that "*he never sat in a theatre, rose at a dinner or entered a crowded room—AND HOW OFTEN HE DID ALL—that he did not feel, and tingle to feel, that to all Americans he was the one man whom all his land and people rejoiced to love;*" and in the paragraph from this editorial, which we have printed in large letters, is to be found the reason why our people are denied the pleasure of honoring this grand old hero for ten or twenty years yet to come. When we reflect upon it, does it not seem all wrong that we should be deprived of our great and useful men so prematurely? England, with Gladstone; Germany, with Von Moltke, and but lately with Bismarck; France honoring McMahon and De Lesseps; Italy, until but lately enjoying the intellect and vigor of Crispi; all men well advanced in years. America, with Grant, Sherman, Sheridan, Hancock, Meade, Windom, Sumner, Porter and a host more, in the grave, men now dead, who but entered the world when the great ones of European countries were already mature. A somewhat pregnant and significant thought occurs to us. Twenty years ago, the Franco-Prussian war demonstrated the martial supremacy of Germany to the civilized world. The military chieftain of Germany (Von Moltke) was then 70 years of age, as old as General Sherman was when he died. Was Von Moltke a *fossil* in 1870? Yet, to those who are familiar with his habits, it is well known that he was then and is now very careful of his health. Certainly it would seem that the great ones of America have yet to learn the lesson that a man of 60 cannot live as does a man of 40.

Hygiene of Infancy.*

BY GEORGE N. HIGHLEY, M.D.,

Conshohocken, Pa.

WITH our advancing civilization society is constantly making the infant's environment more unhealthy; daily making more difficult its struggle for existence.

Science is ever giving us new facts about the cause and nature of disease; but little progress is made in their prevention or their treatment. What does it avail that we are able to detect the cause of disease in living germs, so long as we allow to remain around us fertile fields for their propagation, and have no practical means of protecting the system from their deadly influence?

In dealing with the problem, how best to conserve the health and lives of the little ones, we naturally turn our attention to those elements and conditions which experience has shown us to be deleterious to them. These are: excessive heat, impure air, water and food, improper kind of food and food improperly administered, errors in clothing, bathing, etc. I have purposely placed excessive heat first on the list, because its influence in the causation of the diseases of the digestive system of infants is greater than all the others combined, taking them as we usually find them. I do not underrate the evil influence of polluted air and water and food, and of improper and irregular feeding; these are bad enough, to be sure; but their harmful effects are decidedly mitigated by a cool atmosphere, so that in winter death from a diarrhœal disease is quite exceptional. On the other hand, the excessive heat of summer carries off many victims that have been nursed at the breast and have had their hygienic conditions as favorable as possible.

Cases like the following are of frequent occurrence. A child in the sultry summer weather becomes peevish and restless; its head is hot, its mouth and lips dry. The mother feels its gums and discovers that it is teething (it is well to remember that children are always "teething" during the first two years of life). Should the infant continue ill, a physician is summoned; if no diarrhœa or vomiting has occurred, he is apt to agree with the mother, prescribe a bromide or an opiate, or perhaps scarify its gums and pass on. If there has been stomach and intestinal derangement, he will likely inquire carefully into the character of its food, the methods of feeding, etc., correcting any errors in these. He prescribes some medicines, and expects that he will find it much better on the following day. Too often he does not; too often he finds it with a pinched, anxious expression, sunken eyes, cold extremities and with frequent vomiting and purging—in a word, that it has cholera infantum and that its chances of life are very slim. It is possible, perhaps probable, that a large number of the little patients affected in this manner would make a speedy recovery if early treated with cold affusion; and if their mothers and nurses

* From the *Medical and Surgical Reporter*.

but knew the important part that heat plays in causing these complaints and as diligently guarded their babes against the ravages of summer's heat as they do against the chilling influence of winter's cold, cholera infantum would have a great many less victims.

If the home is a one or two-story dwelling in a crowded street, unprotected by trees, or otherwise, from the glare of the sun, it is often a difficult matter to shelter the infant from the external heat. But even in the most unfavorable conditions, much can be done. The child should be dressed lightly—a light, thin, woolen shirt (made of the finest lamb's wool if possible), neatly fitting and long enough to reach the hips, with a thin dress, is all the clothing required for the body. If the weather becomes cooler, more clothing can easily be added.

The child should also have frequent baths—not with wash-rag and soap and a basin of water—but immersed in a tub of water at a temperature of 85° , and less as it becomes accustomed to it. It should remain in the water only a few minutes of course.

The infant should also be taken out regularly in the early morning and in the cool of the evening to some locality where it can have a good supply of pure air. In the midday let it take its nap in the coolest and airiest room the house affords; if this is necessarily a hot one, the morning and evening rides and the cool baths will do much to enable its system to endure it.

The thought of pure air and water brings up questions in general hygiene that I need not enter into here; it will be sufficient to repeat a well-known truth—namely, if the streets, alley-ways and back-yards could be kept free from all decomposing organic matter, a most important factor in the etiology of disease would be removed.

The question of infant feeding continues to be one of supreme importance. High temperature and bad food are the two prime factors in causing the diseases that annually carry off so many little victims, and in a measure they depend each upon the other for their pernicious effect.

It is conceded by all that the natural diet of the infant—the mother's milk—is the best that can be given it. Of the large number of deaths from cholera infantum in our large cities, only three per cent. occur among infants fed at the breast, while over 90 per cent. are bottle-fed babies. Naturally it would seem that every effort ought to be made to help the mother nurse the child. I venture the assertion that the person who can invent or discover a remedy that will promptly cure a sore nipple, will have invented or discovered a means of saving thousands of human lives.

The second best food for the child is undoubtedly cow's milk, modified so that it shall closely correspond in chemical compositions to mother's milk. There have been numerous attempts at accomplishing this. Many mixtures have been devised, and the market has been flooded with patent foods, all claiming to be perfect substitutes for the milk of the mother. A careful comparison, however, will show that, in nearly all of them, there is a wide departure from the natural food. The following mixture, recommended by Dr. T. M. Rotch, in the *Cyclopedia of the Diseases of Children*, approaches as near to it as

any that I have seen, and thus far it has answered well in the cases in which I have tried it. It is really a modification of what is known as the "Meigs Mixture," and is made as follows. For an ordinary 8-oz. nursing bottle: Milk, 1 oz.; lime water, $\frac{1}{2}$ oz.; cream, $1\frac{1}{2}$ oz.; milk sugar, $\frac{1}{2}$ oz. ($3\frac{1}{3}$ drams); water, $4\frac{1}{2}$ oz. The objections to this are, that at first its preparation seems a trifle troublesome, and, second, that it is somewhat expensive—a matter of some consideration to the poorer classes. It is, however, quite as easily prepared as many manufactured infants' foods, and does not cost any more—at any rate, it is much less expensive than a funeral.

There are other matters, quite as important as the kind of food, which should have careful attention. These are the quality of the food and the quantity and the method of its administration. Pure, unaltered milk, no matter how it may be mixed, is absolutely indispensable to the well-being of the infant. If it can be procured shortly after it is milked from the cow, and placed on ice, that is all that is necessary. If it cannot be obtained until it has been carried around in cans for several hours, then it should be boiled and bottled—the mouth of the bottle being stoppered with a pledget of cotton—after which it is placed on ice, or in pans of cold water if ice cannot be obtained.

Having procured and prepared a good food, the next question is that of its administration. Errors in this are frequent and serious. Early the infant should be taught to want its food at regular intervals—never less than three hours. If this be carried out, errors in quantity will be little likely to occur. The child's desires will be a good index of how much it ought to have. The reprehensible practice of giving babies bottles with long tubes, and letting them alternately sleep and suck for hours, is so obviously bad that mere mention of it is sufficient.

Of the various methods of peptonizing milk, little need be said. For a baby whose digestion has been temporarily overtaxed, they may be used with much benefit for a short period. Used regularly, they do harm by seriously interfering with the normal digestion—diminishing the secretions of the natural digestive ferments.

The following rules of guidance seem to me to be as near correct as the present state of our knowledge will warrant.

Use every reasonable effort to have the mother nurse her child. If this is impracticable, endeavor to obtain a supply of pure cow's milk twice daily if possible. Use the best means possible to protect the milk from fermentative changes (or from bacteria, if you choose). Modify it in the way that I have described, if possible; otherwise give it pure or simply diluted with water and a little lime water. Give it at regular intervals, and never at shorter intervals than three hours. A single feeding should not occupy over half an hour; nor, on the other hand, should the milk be taken too rapidly. After using, the feeding bottle should be thoroughly scalded and cleansed. Clothe the infant lightly in hot weather. Bathe it frequently, using soap sparingly. Keep it in the outside air as much as possible, especially in the early morning and in the cool of the evening. Above all, remember that heat is a most important factor in the causation of disease.

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EDITORIAL.

The Appropriation to our State Board of Health.

FROM the annual report of Dr. George H. Rohé, Commissioner of Health, we learn that he asks for an appropriation of \$93,800 for the Department of Health of the city of Baltimore; a city of, maybe, a quarter of a million persons. The State Board of Health of Pennsylvania has been receiving an appropriation of \$5,000 per year, and it has the sanitary welfare of 5,000,000 persons to look after. Is comment necessary?

Hygiene for Manufacturers.

WE are anxious that our manufacturers, and others, who employ large numbers of persons should come to feel, as we now do, that a dissemination of a knowledge of hygiene amongst their people will really redound to the material interest of the employer; that *it will pay* to teach hygiene to the men and women who are doing our work for us and helping to pile up the employer's wealth. That we may make the question as clear to all as it is to us, we will cite a suppositious case.

Let us suppose that Mr. B. employs 1,000 men and women in his factory. He has an intelligent and observant superintendent; who, going about among the laborers, notices that, on a certain day, 100 of these 1,000 workers are not laboring as well as usual; they work more slowly and make more mistakes than they did yesterday; he calculates that, out of the ten hours to-day, these 100 persons accomplish only as much work as they did in nine hours yesterday. He therefore calculates that the work of 100 hours has been lost, or, at least, that the products for sale which could have been made in 100 hours of good work have not been made. He says nothing, but continues to observe, and he notes that at least 100 of these laborers, on an average, will have a *bad day* once in each week; then he multiplies 100 by 52, and he finds that owing to these *bad days*, 5,200 hours of work are lost in the course of a year, and when he divides 5,200 by 10 he finds that it represents 520 days, and when he does a little more calculation he learns that this means a loss of maybe \$1,000 to his employer. At first he is puzzled to understand this condition of affairs. He questions these *listless* workers and to his query, "if they are sick," the universal answer is in the negative. No, they are not sick; but their work on these *bad days* is not up to the standard. We ask this superintendent to inquire whether his employees' bowels are regular, and they reply, oh, yes; do you have a daily evacuation? well, not every day; how often? well, sometimes I go for two days and sometimes for a week. Then we ask the superintendent to put this

question to his people when he notes one of the *bad days*: "When were your bowels moved last?" and the answer generally received is, "Not for a week." Next day the listlessness has vanished and the work is up to the standard; inquiry reveals that some *opening* pills or potion were indulged in the night before. We always endeavor to be very careful and conservative in our hygienic doctrines, so that we may not be accused of exaggeration; hence, we feel that we are safely within the mark when we assert that our manufacturers and employers are losing \$1,000 per year on every 1,000 employees, because these employees do not understand the necessity of daily evacuations from the bowels.

When we make this statement to this wise superintendent, the smile of incredulity is seen upon his face (he is too polite to tell us that we are cranks), and he says nothing. Having heard him complain a few moments before that the machinery is not "working well" to-day, we link arms and lead him to the engine-room, when we find that the fireman, because of a severe headache (the result of constipation), has failed to properly rake down his fire and it is not burning brightly, steam is not being properly generated, and, without any words from us, the superintendent at once grasps the situation and tells us that his machinery is not working well because the bowels of his furnace have not been evacuated, as a result of which the fire fails to burn well, and the steam (which is the life of his machinery) is not properly generated. Taking him to one side we tell him that what he explains to us about his *iron* machinery is identically the same with his *human* machinery up-stairs. The bowels not being clear, the vital fire cannot be bright and vigorous, and, as an inevitable sequence, the human machine will turn out less and inferior work.

We have used this homely illustration, of the bowels, that we might bring home to our manufacturers the fact that much which they have a right to expect they fail to receive, because their employees are not familiar with the teachings of hygiene. The loss of time from accidents and from serious illness, (necessitating absence from work) is recognized by all employers, and, we fancy, finds a place in their financial calculations; but we imagine that the loss which accrues from such trivial causes as we have typified by constipation has not yet suggested itself.

If our calculation be not too great; if \$1,000 per year is thus lost on every 1,000 employees, and if there are 500,000 persons so employed in this State, then we are appalled when we come to realize that the manufacturers of Pennsylvania are losing \$500,000 per year *because their employees do not realize the necessity of having daily evacuations from the bowels*. Of course, this is only one of the many little points, attention to which would curtail the unnecessary losses of our employers, and our purpose in writing this editorial has been to cause our employers to reflect, when we are confident that they will come to feel as we now do, that it is just as much to their interest, from a business point of view, to have a regard for their human as for their inanimate machinery. We have purposely eliminated the philanthropic aspect of the question from this discussion, desiring, for the moment, to place this question before our *business* men solely in a *business* light.

NOTES AND COMMENTS.

The Fatality of Consumption.

In forty years, cholera has destroyed 343,953 lives in Prussia; but 90,000 a year, on an average, die from consumption alone.

Visiting the Dead.

A curious fashion has come into vogue in Paris. In all the cemeteries metal boxes with a slit in the lid are placed on the tombstones to receive the cards of visitors. The relatives of the deceased are thus enabled to see who among the living still cherish the memory of their departed friends.

The Telephone as a Factor in Hygiene.

In some hospitals in Europe it is customary to allow visitors to converse on certain days, by means of a telephone in a waiting-room, with patients in the wards, and this arrangement has been found to work admirably, as it not infrequently happens that the nervous state of the patient or the possibility of infection of the visitor renders closer communication inadvisable.

Railway Sanitation.

An ordinance has been passed in Indiana which compels all railroad companies to put storm doors on all railroad coaches and street cars for the carriage of passengers, to keep the temperature from sixty-eight to seventy in the cars, and to furnish spittoons, partly filled with a solution of bichloride of mercury, for the use of persons suffering from chronic cough and expectoration.

Narrow Chests.

Orders have been given the Prussian army surgeons to measure the chests of recruits every four weeks. All are to be regarded as narrow-chested the circumference of whose chests is less than half the length of their bodies. Narrow-chested men, whose bodies are not widened by drill, are to be regarded as predisposed to consumption and to be discharged as soon as possible, lest they infect healthy soldiers.

Careless Speech and Children.

If we stop to think how every word spoken in the presence of a little child affects its future for good or evil, we would all be far more considerate in our speech. It is astonishing how children will ponder for days a careless word or sentence which no one supposed they had even heard, and at some critical moment use it themselves with a most startling and horrifying effect. Then, alas, we see and deplore its real deformity, and realize how potent is our influence over these observant innocents!

To Prevent Adulteration.

With the view of checking the adulteration of food, the municipal authorities of Rome have recently passed an enactment that the names of all makers and venders of alimentary substances, injurious or dangerous to health, or adulterated, shall be published in the daily papers.

School Sanitation in Michigan.

According to an amendment of the school laws of the State of Michigan, children suffering from consumption or chronic catarrh must be excluded from public schools. The circumstance is interesting as a first step toward the public recognition of a most important truth, the fact, namely, that the disorders of the respiratory organs can be propagated by direct contagion, and that the atmosphere of a consumptive's sick room, unless constantly ventilated, is apt to become a virulent lung poison.

What Horses Die of.

A New York horse life insurance company, insuring only sound and generally young animals, worth between \$100 and \$400 each, reports that, of 704 horses dying within the past five years, 183 died of colic, 77 of inflammation of the bowels, 74 of kidney trouble, 51 of pneumonia, 52 of sunstroke, 30 of pinkeye, 37 of lockjaw, 23 of broken legs, 12 of epizootic, 10 of heart disease, 4 of blind staggers, 9 killed by runaways, 4 were drowned, 2 were killed by lightning, 128 died of unknown diseases, and only 8 were burned.

It is Illegal for Boys to Smoke.

The anti-smoking law, which was enacted by the Legislature of New York, and went into effect September 1, 1890, ordains that "No child, actually or apparently under 16 years of age, shall smoke or in any way use any cigar, cigarette or tobacco in any form whatsoever, in any public street, place or resort. A violation of this subdivision shall be a misdemeanor, and shall be punished by a fine not exceeding \$10 and not less than \$2 for each offense." It will be noticed that boys not only actually but also "apparently" under 16 are liable to arrest.

How to Wash the Face.

You all, no doubt, think you know how to wash your face, yet many persons have paid two guineas to the distinguished English physician, Sir Erasmus Wilson, for the following advice: "Fill your basin about two-thirds full of fresh water, dip your face in the water, then your hands. Soap the hands well and pass them with gentle friction over the whole face. Then dip the face in the water a second time and rinse it thoroughly. A second basin ready with fresh water is a valuable addition. Rain or distilled water, owing to its purity and softness, is the best for washing the face."

Baseball Hygiene.

Everywhere, nowadays, do we hear of hygiene, showing what a hold this *common-sense* science is taking upon the people. Never were we more surprised, though, than to note a whole column in a recent daily paper, headed "Baseball Hygiene." As played to-day, baseball and football are worthy only of condemnation. They are ruinous to the physical welfare of those who indulge therein; but they possess the elements of benefit to mankind, and if the play can be regulated in accordance with the principles of hygiene, the condemnation which we now have will be converted into commendation for what will then be healthful physical sport.

The Boy with the Big Chest.

We know a little boy of nine, whose mother was recently compelled to buy for him a coat that was intended for a boy of twelve, because the nine-year size was entirely too small for him *across the chest*. This boy has been, for a year or more past, practicing deep and forced inspiration (such as we have so often recommended, and again, this month, describe in our article on "The Prevention of Consumption"), and as a result his chest is as large as that of the average boy of twelve. Now mark these words: *if this boy continues this practice he will never die of consumption*. Paste this note in your hat and never forget it; it will beat Koch's lymph all to pieces.

A Lesson from General Sherman.

The life-history of General Sherman adds one more to the really limitless number of instances going to prove that it is a mistaken idea for us to force education into our children's minds, at the expense of their bodies, with the idea that this early mental development will be of service to them in after-life. General Sherman graduated sixth in his class at West Point; and while he became the first soldier of the nation, we are not even reminded of the names of the five who, according to the mistaken idea, should have outstripped him in martial glory. Of course, mental education is not to be neglected, but too many parents place far too much store thereon.

Post-Banquet Hygiene.

It was Talleyrand who is credited with having said (after the "Congress of Vienna"), that it was the first duty of a statesman to look out for his liver after a congress. There is exquisite wisdom in this saying, and it would be well if not only statesmen, but all those who are fond of banquets, would take it seriously to heart. If liquor affects the stomach and the brain unmistakably, banqueting most certainly deranges the liver, even though gluttony and overindulgence in wine be not parts of the banquet. If, after a banquet, each one would take as much trouble to re-arrange his liver as he has taken to disarrange it, we would hear less of dyspepsia, gout and apoplexy.

Heredity.

Heredity is a vague, general term used to cover all the influences, of whatever kind, which affect in any way the nature and character of a child before the hour of birth. All that the child is at that hour is due to heredity alone. What comes after is the growth, development, modification, perversion, distortion or completion by nature, culture, training, teaching, amid circumstances good or bad, twisting or perfecting, of what under heredity has been formed and composed. The hour of birth is the hither boundary of our field, the other is beyond our ken; and all that goes in any way to affect the make-up of the child before that hour is the subject-matter of our study.

Powder for Sore Feet.

From Germany comes a bit of valuable information for policemen, carriers, collectors and others whose occupation requires them to be on their feet a great deal. No matter how comfortable and roomy their shoes, such persons are almost always more or less troubled with chafed, sore or blistered feet. The difficulty may be readily overcome by the use of a powder, which is a necessary part of the German army equipment. It is known there as "*Fusstreupulver*," and consists of three parts of salicylic acid, ten parts starch and eighty-seven parts pulverized soapstone. It keeps the feet dry, quickly heals sore spots, and prevents chafing. A powder of pulverized soapstone is also good.—*American Druggist*.

Don't Run Up-stairs.

It would seem that nature may possibly have intended that cats and dogs should *run* up-stairs, but she certainly does not want human beings to so ascend. Yet, does there live a woman or a child that does not run up-stairs? Men, probably, are too lazy to so rapidly elevate themselves; but whether this be the reason or not, it is a fact that men are not nearly so prone to *run* up-stairs as are women and children. We would ask our male readers, whose wives and children are sinners in this respect, to cultivate the habit of uttering a cautionary *don't run up-stairs*, whenever they are about to ascend. Reiteration of the caution will ultimately overcome the habit, which must be regarded as a very pernicious one.

To Destroy Vermin.

The *Journal of Chemistry* says that the following is fatal to all sorts of vermin that prove such a vexation of spirit to the good housekeeper: Two pounds of alum dissolved in three or four quarts of boiling water. Let it remain over the fire till all the alum has dissolved. Then apply it with a brush, while boiling hot, to every joint or crevice in the closet where ants and cockroaches intrude, to all the pantry shelves, and to the joints and crevices of bedsteads. Brush all the cracks in the floor and the mopboard with this mixture. A cement of chloride of lime and alum, used to stop up rat-holes, and the walls and cracks and corners washed with the above-mentioned hot alum and borax, will drive away rats as well as insects.

Female Proportions.

The model female form of average size should measure as follows : Height, 5 feet 4 inches ; circumference of neck, 13 inches ; chest, $34\frac{1}{2}$, with an expansion and contraction of 4 inches ; arm, largest point above elbow when straight, $11\frac{1}{2}$ inches, when bent, $12\frac{1}{2}$; arm below elbow, largest point, 10 inches ; waist, $27\frac{1}{2}$ inches ; hips, 37 inches ; thigh, 20 inches ; calf, 14, and weight without clothing, 129 pounds.

Insanitary Kitchens.

"A hair in the hash," or a fly or a dead roach in the bread, is generally sufficient cause for grievous fault-finding and frequently for a change in the presiding genius of the kitchen. To our way of thinking, these little destroyers of appetite and digestion not only should be looked for under the existing order of things, but we wonder why they are not much more frequently present. We must not forget that the process of preparing food for the table is, in reality, a chemical process, and what professor of chemistry, we would ask, would undertake to do good work in a laboratory as poorly lighted as most kitchens are. The "food laboratory" (the kitchen) should be the best lighted room in the house, and when it is we shall have less fault to find with our cooks.

A Prescription for Longevity.

That grand old man, Dr. Oliver Wendell Holmes, has certainly uttered some very wise sayings, but he never said a better or truer thing than that "*the best prescription for longevity is the acquisition of incurable disease*," whether we regard it satirically or seriously. How frequently, almost daily, do we hear of the death of some one, whom we supposed to be in robust health, while the "*chronic invalid*" "hangs on" almost forever. Seriously speaking, the knowledge that one has some chronic disease will bring about that regard for hygiene which will tend to counteract the fatal tendency of the disease and to indefinitely prolong life ; while, on the other hand, the feeling of supposed perfect health will render one less prudent at least, if not, indeed, absolutely reckless.

Cleanly Servants.

Has it ever occurred to our good friends, the housekeepers who read this journal, that of all cleanly persons the cook should be the cleanest? When we reflect that by her hands, and in proximity to her person, is prepared all the food that enters our mouths, will we not realize that she ought to be a very clean person? But is she? Do you ever give a second thought as to whether she is or not? In these days of universal plumbing, the bath-tub is found in the most modest and unpretentious of homes ; but does your cook have access thereto? Very rarely, we are sure. Surely, when a refined lady reflects upon it, she will agree with us that this is all wrong, and that if it be essential for the family to have bathing facilities, it is equally important that the "*chemist of the kitchen*" should be afforded the opportunity of purifying her body.

Study Your Children.

We think that it may be accepted as a rule that very few human beings are physically perfect. All of us, including children, have some "*weak point*," so to speak; some organ or function less perfect in its working than the rest. As the worthy parent will carefully study the disposition of the child, that its moral and mental nature may be properly trained, so we would suggest should they do with the physical organism. If it be the digestion that is at fault, then should the eating be carefully watched; if it be the heart, then should violent play be interdicted, and so on. Of course, the advice of a physician will be necessary to ascertain this weak point, but if we find it and act accordingly we will make much stronger men and women of our boys and girls than we are now doing.

A Message from the Dead.

The dusky subjects of the late King Kalakaua, of the Sandwich Islands, will certainly have not only most marvelous ideas of *Yankee* ingenuity, but, if superstitious, will have their mystic faith most firmly confirmed. For, singular as it may seem, there happened to be, in the room in which the king died, in the hotel in San Francisco, a phonograph. Without any idea of a fatal termination of his sickness, the king talked into this machine. When his death occurred, his attendants took possession of the phonograph and have carried it with them to Honolulu, where the people will really hear the last words of their ruler, uttered in far-off California, coming back to them in his own familiar tones of voice, weeks after they have been told of his death. Can we wonder if they are superstitious?

Decay of the Stomach.

In the "Memoirs of Count Segur" there is the following anecdote: "My mother, the Countess de Segur, being asked by Voltaire respecting her health, told him that the most painful feeling she had arose from the decay in her stomach, and the difficulty of finding any kind of aliment that it could bear. Voltaire, by way of consolation, assured her that he was once for nearly a year in the same state, and believed to be incurable, but that, nevertheless, a very simple remedy had restored him. It consisted in taking nourishment of the yolks of eggs beaten up with the flour of potatoes and water." Though this circumstance concerns so extraordinary a person as Voltaire, it is astonishing how little it is known and how rarely the remedy has been practiced. Its efficacy, however, in cases of debility cannot be questioned, and the following is the mode of preparing this valuable article of food as recommended by Sir John Sinclair: Beat up an egg in a bowl, and then add six tablespoonfuls of cold water, mixing the whole well together; then add two tablespoonfuls of farina of potatoes; let it be mixed thoroughly with the liquid in the bowl; then pour in as much boiling water as will convert the whole thing into a jelly and mix it well. It may be taken alone or with the addition of a little milk in case of stomachic debility or consumptive disorders.

Cleanliness and Civilization.

Certainly cleanliness is not only "next to Godliness," but it is a most intimate acquaintance and companion of civilization. After all, civilization is but a process of refinement, and refinement without cleanliness is an impossibility. A dirty person cannot be a refined person, no matter how fashionably or expensively he or she may be adorned externally. Hence, if people would be refined (and who does not own up to this ambition?), they must, first of all, be clean. A refined person cannot be like the old Mongol crone, who, seeking some medicine to put on a sore, and being told that before applying the salve it would be necessary to wash herself, gave it back, saying, "I am 67 years old and I have never washed in my life; do you suppose I am going to begin now?"

The Imperial Russian Institute of Preventive Medicine.

The Institute of Experimental Medicine, founded in St. Petersburg by Prince Alexander Petrovitch, of Oldenburg, at a personal cost of over \$100,000, was formally opened and handed over to the Imperial Government on December 20th. The ceremony, which partook largely of a religious character, was attended by the ambassadors, several members of the Czar's family, and by M. Chamberland, representing M. Pasteur; Dr. Pfuhl, representing Professor Robert Koch; and Mr. Watson Cheyne, representing Sir Joseph Lister. The Prince of Oldenburg was thanked by imperial rescript and appointed Governor of the Institute, and the three delegates having delivered brief addresses, each in his own tongue, the proceedings terminated with an entertainment given at the Oldenburg palace.

Ascetic Lives.

In the monastery at Gethsemane, Kentucky, a large majority of the monks are French, German and Irish. They eat but one meal a day, consisting of soup, made of vegetables, and bread boiled in water, and a little rice. In summer this meal is served at 11.30 A.M., at other seasons at 2.30 P.M. In Lent it is taken at 4.30 P.M., and consists of bread and water alone. The monks take from thirteen to twenty ounces of food per day each, yet they do manual labor in the fields and workshops and it is noticeable that all of them walk with light and springy step, and even those well along in years are more vigorous and active than men of their years in ordinary condition.

One can best realize the severity of the food regimen when it is remembered that, winter and summer, the monks rise at 2 o'clock in the morning and retire at 7 or 8 o'clock in the evening. Father Edward, the new Abbot of Gethsemane, himself a gentleman of rare education, courtly polish and much kindness of heart, says that only those upborne by the deep religious devotion, with the one idea of prayer to relieve the world of its burden of sin, can ever endure the life. Gentlemen who have suffered disappointments and are seeking seclusion—a living burial—have tried it in vain. The heroism of the life is never seen, it cannot be made a spectacle as humility sometimes is, and, therefore, only the mind that lives upon the true religious exaltation can endure it.

Home-sickness.

It may serve, at least, to correct a misapprehension, even if it has no practical bearing (but we think it has), to learn that home-sickness is recognized as a veritable disease by the medical profession, and that it has been dignified with the name of "nostalgia." Bad cases are believed to be incurable, save by one remedy, and that is the gratification of the longing for home. So well is this fact recognized by army surgeons, that when a recruit develops a bad case they favor his discharge, because they realize that he will be but a worthless incumbrance. Residents of mountainous countries seem peculiarly subject to it. The Swiss, for instance, are prone to pine away and die if transported beyond the limits of their beautiful little republic. So, too, with the Scotch Highlander, and it is for this reason that we find Switzerland and Scotland furnishing so small a proportion of our immigrants.

The Elixir of Youth.

"Don't ask me how I am," said Dr. Oliver Wendell Holmes a year or two ago. "It is a dangerous thing to show a sympathetic interest in my health, as if you thought I must die because I am old."

"Heaven forbid," said I.

"Well, young people make that mistake sometimes, to their cost," he proceeded, with a wonderful twinkle in his eye. "They write to me like this: 'Dear Dr. Holmes, as in the ordinary course of nature you cannot live much longer, please send me your autograph by return post.' What happens? Why, they die before the year is out. So, when I see a young man approaching, with my health plainly in his mind, I say, 'Not a word on that subject, my young friend, it is a bad omen—for you.'"

And he laughed with a glee of five-and-twenty.

Disheartened Children.

Do not crowd the children! The school duties should be measured out to them in proportion to their nervous vigor. It is manifest to every discriminating observer that there are causes at work, in city life especially, that will compel a further reduction in the duration of the school attendance and in the pressure on the highly evolved nervous organizations of the present day. The hours and pressure are already much less than was considered perfectly legitimate in your and our boyhood days. The penalties then liberally administered, "for the good of the rising generation," are not tolerated for a moment now. Correctional measures of discipline have now to be administered sparingly and judiciously; you must spare the rod sometimes, or you will spoil the child. Many parents of our acquaintance view with annoyance and chagrin the apparent incapacity of their offspring, in the fact that the latter cannot undertake as many branches of study as were in vogue when they themselves were children. The only comforting assurance that we can give them is that the times are changing, and are destined to change.

Do not Expect too Much of Children.

If all children under 9 or 10 years of age could be given a bath every day at half-past 5 and turned into bed to eat therein their suppers of bread and butter and milk, or such plain food, and then left to sleep soundly until six the next morning (as they would do if so handled), it would be the best way to manage them. But if you differ with us and allow your small children (who have been playing hard all day, until they are utterly exhausted) to remain up for the evening meal and to fret and worry until 7 or 8 o'clock, then we beg of you not to expect impossibilities. It will be just as physically impossible for such a child to be in a good humor as it would be for a thoroughly drunken man to stand straight. The poor little thing may try hard to be good, fearing that it may not again be allowed to "stay up," but the effort will be futile; it will be a physical impossibility for the child to be good, and parents should recognize the fact.

The Cradle of Influenza.

Professor Tessier, of the medical faculty of Lyons, has returned from Russia, whither he was sent last March to take evidence upon the course of influenza there and the various conditions of its evolution. He found that influenza is a growth of Russian soil, and when not a raging malady is a smoldering one. The way the people live in winter, locked up in heated houses; the flatness of the soil, its consequent bad drainage, and universally sodden condition when the April thaw begins; the filthiness of the farmyards, the village streets, and the rivers, which become suddenly swollen, and on falling leave a putrid mud behind; all conduce to make influenza endemic. Its microbe is, in fact, to be found in this mud. Dr. Tessier calls it a strepto-bacillus. What is peculiar in this disease is the alliance with this bacillus of pneumococcus, which also lives in Russian marshes, river mud, and village pools.

Winter Itch.

A most annoying itching, manifesting itself at night when the clothing is removed for bed, and confined mostly to those portions of the body that have been covered by the clothing, notably the lower limbs, has been recognized as a real disease, and been called "winter itch." It is annoying, not only because of the itching, which sometimes precludes sleep, but because one can hardly divest himself of the idea that fleas or bugs must be somewhere at hand. Such is not the case; meteorological conditions, with which we are not very familiar, are responsible for it. Manifesting itself only at night when we are undressed and not feeling sick, we are not apt to consult the physician, yet while it lasts the itching is very annoying. If you will copy this formula, and get your druggist to put it up for you, and apply it to the itching surface, you will derive much benefit therefrom:

Resorcin (Merck's),	1 drachm.
Glycerin,	2 "
Water,	Enough to make 4 ounces.

Overeducation of Girls.

In the *New England Medical Monthly* there appears the following from the pen of the late J. Milner Fothergill: "Girls of the lower class escape from the grasp of the schoolmistress at the age of thirteen. Not so, however, the girls of a higher stratum. High-schools for girls are now in vogue. But they again are not an unalloyed good. The sterner stuff may shine at Girton and Newnham, but what about the frailer creatures? How come about those myriads of small, slight, *petite* women, of emotional temperament and feeble digestive capacity, we encounter on all sides, and especially on fashionable promenades? They are dwarfed organisms—mediocrities in all measurements. They contrast with the 'stalwart mothers of heroes' we still see in the country; those slim spinsters, whose doom it is to die unwed. They are the priestesses and patrons of the circulating library and the modern novel; but these blighted women are but indifferent material for wife and mother."

Take More Sleep.

There are lots of persons in the world to-day who are unavailingly taking medicine for that relief which they fail to secure therefrom, *when all that they want is more sleep*. We were recently consulted about a bright and active young business man who, after a full day of business, would spend the evening until midnight in temperate social pleasures, then (being fond of reading) two hours would be passed with the *latest* new book, none of which he ever missed, while he is always up and dressed by 7 A.M. Gradually he is growing thin and thinner, and, while not really sick, it is noted by friends that his appetite and relish for food are gradually growing less, day by day. This young man is on the "*Consumption Turnpike*," and no medicine will halt his course; what he wants, and what all like him require, is *more sleep*. We can take it, as a rule, that anyone who habitually sits up until after midnight, getting up early in the morning, is *killing* himself; we mean what we say. Take plenty of sleep.

How to Sweep.

What a nuisance is "sweeping-day" to the housekeeper and to everyone who must inhale the floating dust, and what a farce it really is when we come to reflect upon it, for, in reality, we have but removed the dust and dirt from the floor to have it deposited upon every article of furniture in the room, from which it must be subsequently dusted; while, at the same time, a not inconsiderable portion will settle back again upon the floor from which it has been removed. Sweeping, as usually practiced, might be defined as "an agitation of dust and dirt, with a very partial removal thereof." But this can all be remedied if you will spread across one end of the room a line of dampened sawdust and sweep it before you. The dust will all adhere thereto, and can be finally thrown from the room along with the sawdust. If it be a wooden floor the sawdust can be dampened with a solution of carbolic acid or some similar disinfectant, whereby cleanliness and disinfection can be both accomplished at the same time.

Pork Eating and Cancer.

Not long ago a paragraph was quoted in the *Record* (says Dr. Wm. S. Dodd, of Vienna), saying that cancer was unknown among the Jews, and that this immunity was due to the fact that they eat no pork. With the first statement I can have no quarrel, but the deduction from it remains to be proved.

The Mohammedans abhor pork as religiously as do the Jews. In all the interior of Asia Minor the pig is an utterly unknown animal, except from hearsay. I suppose this is true of the greater part of Turkey, but I speak positively only of that part of the country with which I am acquainted. Yet, in spite of this absolute absence of pork, cancer is by no means an uncommon disease. I have seen cancer among Mohammedans as well as among others in Turkey. Though cancer may be more common among pork-eating peoples, yet it must also have causes other than those due to the eating of this meat.

Hunger and Infection.

It is a well-known fact that hunger predisposes to certain diseases, but it has been reserved to two Turin doctors to demonstrate the increased liability experimentally. Their observations were carried out with the virus of bacillus anthrax on pigeons, a disease to which these birds are, under ordinary circumstances, refractory. They found, however, that six days' total deprivation of food rendered the birds amenable to the virus, on condition that food was still withheld. If, however, food was given at the same time as the virus, then they still successfully resisted infection. Further, when starvation was continued for two days after the inoculation, and food then given, the development of the disease, though not prevented, ran a slower course. Lastly, the virus proved capable of infecting birds well fed up to the date of inoculation but starved subsequently. The line of investigation is evidently one which admits of further research, but the moral is obvious.—*Med. Press.*

How to Keep Warm.

It may not be generally known that, when exposed to severe cold, a feeling of warmth is readily created by repeatedly filling the lungs to their utmost extent in the following manner: Throw the shoulders well back and hold the head well up. Inflate the lungs slowly, the air entering entirely through the nose. When the lungs are completely filled, hold the breath for ten seconds or longer, and then expire it quickly through the mouth. After repeating the exercise while one is chilly, a feeling of warmth will be felt over the entire body, and even in the feet and hands. It is important to practice this exercise many times each day, and especially when in the open air. If the habit ever becomes universal, then consumption and many other diseases will rarely, if ever, be heard of. Not only while practicing the breathing exercise must the clothing be loose over the chest, but beginners will do well to remember, in having their clothing fitted, to allow for the permanent expansion of one, two and even three inches which will follow.

Poisoned by his Easy Chair.

Ex-Mayor Samuel C. Cobb, who was one of the sturdiest of Bostonians, recently began to fail in health, with such slowness that the decline was not noticed until it had gone far, very far, but with a fatal sureness that no medical skill could, at the last, avert. It was all a mystery. The physicians doctored him for this and for that, surmising now one disease and then another, until at the last moment, just a few weeks before his death, which occurred last month, they discovered the real trouble. Arsenical poisoning was at the root, and that poisoning had been steadily going on for years. His curtains, his wall-paper and, more particularly, his favorite easy chair were made of material that contained the deadly arsenic, and the poor man had unknowingly been breathing in the poison while supposing he was resting and gaining strength.

The Hygienic Aspect of Tights.

Though we hardly imagine that the question of *tights* will have any special interest for our lady readers, yet we must briefly have our say on this subject, which is now agitating a portion of the theatrical world. Leaving the "morality of tights" to our clerical brethren, we condemn them from a hygienic point of view, and we make this condemnation as emphatic as words can make it, hoping thereby to be of some service to the health of the poor girls who earn their living by dancing on the stage. The currents of cold air always playing about "behind the curtain" will play havoc with the health of girls who have discarded the warm clothing of the street for the scanty protection of "tights." This undress uniform has caused the death of many poor girls, and it is time that theatrical managers were told so in plain and emphatic words.

Open the World's Fair on Sundays.

Judge Thayer, of this city, in a recent decision very tersely remarked that neither the Czar of Russia nor the Postmaster-General of the United States had ever been accepted in this country as an authority on morality; having reference in his remarks to the condemnation by these two gentlemen of Tolstoi's "Kreutzer Sonata." With all respect for Mr. Blaine, and following the line of thought suggested by Judge Thayer, we must say that Mr. Blaine has never been accepted in this country as an authority on hygiene, when we find him quoted as saying that for hygienic reasons the proposed "World's Fair" at Chicago should be closed on Sundays. Of course, the idea was that one day in the week would be required for cleaning up. Could this not be done at night, and will there not be thousands of persons whose only chance of visiting the Fair and enjoying its educational facilities will be denied them if it is closed on Sundays? There is one thing sure: the *barrooms* of Chicago will be opened on Sundays, and if the Fair is closed the greatest magnet to draw from the tavern will be demagnetized. Open the Fair on Sundays and paralyze the barroom.

Hygiene of our Public Schools.

The primary schools are those which the State should support most generously and look after most watchfully, says *The Medical Record*. Yet in this city (New York) they are the worst of all the grades. Dr. H. D. Chapin has been investigating some of the city primary schools, and he finds that the smallest quantity of air-space allowed by law in tenement-houses is four times as great as the largest required by law in the public schools. In the three lower classes the allowance is as 7 to 40, or as 1 to 5.7. The provision for changing even this small quantity of air is inadequate, while in some schools the air is made still more noisome by the gas which it is necessary to burn in order to see. In addition to this, the primary school-teachers are the poorest paid and have the largest classes.

Oatmeal.

A strong, hearty baggage-man who could, with apparent ease, elevate a modern Saratoga trunk, was recently the object of the most intense admiration to a boy of nine, whose greatest ambition is to be strong, and who would rather be John Sullivan than President Harrison. Thinking it a good opportunity for an object-lesson in eating (as this boy was not what he should be in this line), we asked this Hercules, in the presence of the boy, what he ate to make him so strong. Oatmeal, was the reply; a good, big dish of it every morning for breakfast; there is nothing better, he added, and being cheap, it is within the reach of all, even the poorest. The practical knowledge of this strong baggage-man is corroborated by science, and we would that *well-cooked* oatmeal was even more freely used than it is.

Treatment of Habitual Constipation.

Professor Nothnagel considers the three most important elements in the treatment of habitual constipation to be massage of the abdomen, electricity and abundant exercise. Abdominal massage cannot be properly performed by the patient upon himself, the effort required causing contraction of the abdominal muscles, which prevents deep pressure and manipulation. An efficient substitute for a masseur is a metal ball, weighing from three to six pounds, and covered with cloth to prevent chilling the skin. The patient should every morning roll this over the course of the large intestine for five or ten minutes, beginning in the right iliac region. Professor Nothnagel believes that in the end massage is invariably of service, but that we must not expect much benefit for weeks, and perhaps months. As cases of long duration react but slowly to almost all methods of treatment, we must (in order to guard against the results of fecal accumulation) have resort to laxative mineral waters, drugs, or enemata. Nothnagel believes it better, under these circumstances, to avoid drugs, and only to use an enema, either of pure water or one containing common salt, olive oil or, preferably, glycerine. Acid fruits should be freely taken, along with a nutritious and easily digested diet. Should a vegetable laxative be called for, notwithstanding these remedial measures, Nothnagel recommends a pill composed of podophyllin and the extracts of aloes, rhubarb, and taraxacum.—*Medical News*.

Died of Dinners.

Very truly may it be said of many of our prominent men that they have "died of dinners," as Kate Field very truly puts it. As a rule, our prominent men have been abstemious, hard-working individuals, until, as the direct results of this very work and abstemiousness, they have become prominent. Then, as if to make up for lost time, we find them giving loose reign to the appetite and indulging in the pleasures of the table until gout, apoplexy or fatty degeneration of the heart, liver or kidneys prematurely terminates their brilliant careers. Blaine goes to dinner parties, but he eats not; the flow of wisdom satisfies his sagacious mind and leaves his stomach in fit condition to digest a beef-steak next morning. Social intercourse is delightful and is to be commended, but gluttony is the devil that tempts to the fatal point of falling so many of our so-called self-made men.

Sanitary Funeral Directors.

Among all the live people who are evincing a very live interest in the very much alive subject of hygiene, none surpass, and not many equal, the funeral directors. Daily, almost, do we have reason to learn how thoroughly alive to the importance of the subject they are, and how well they seem to realize the very important rôle they, as a profession, are called upon to play in the conservation of public health. The latest evidence of this interest is manifested in a bill which has been presented to our legislature, which has for its object the registration and licensing of funeral directors, and the prohibition of the practice of the profession by anyone who is not so registered and licensed. A prime requisite for registration will be a knowledge of hygiene. We earnestly and ardently support and second this bill, and confidently trust that it will meet with legislative approval.

The Value of Oysters as Food.

Speaking roughly, a quart of oysters contains, on the average, about the same quantity of active nutritive substance as a quart of milk, or a pound of very lean beef, or a pound and a half of fresh codfish, or two-thirds of a pound of bread. But, while the weight of actual nutriment in the different quantities of food named is very nearly the same, the quality is widely different. That of the very lean meat or codfish consists mostly of what are called, in chemical language, protein compounds or "flesh-formers," the substance which makes blood, muscle, tendon, bone, brain and other nitrogenous tissues. That of the bread contains but little of these, and consists chiefly of starch, with a little fat, and other compounds which serve the body as fuel, and supply it with heat and muscular power. The nutritive substance of oysters contains considerable of both the flesh-forming and the more especially heat- and force-giving ingredients. Oysters come nearer to milk than almost any other common food; their values for supplying the body with material to build up its parts, repair its wastes and furnish it with heat and energy would be pretty nearly the same.—*Century Magazine.*

Responsibility for the Spread of Disease.

There is an important fact, which people will do well to bear in mind—namely, that if an infectious disease occurs in their homes, and they send the clothing of the patient away to be washed before the same has been thoroughly disinfected, and the washerwoman, or any of her family, are infected, she can recover heavy damages.

If the washerwoman knows that the clothing in question is infected, she is guilty of "contributory negligence;" and were she alone to suffer, it is doubtful if, in some States at least, her claim for damages would hold good: but where her husband or children are infected, they might be considered innocent parties, and her negligence not be prejudicial to their suit for damages. A judge in Minnesota not long ago took this ground.—*Boston Journal of Health.*

Vaccination: A Priceless Boon.

We are reminded again by *Gesundheit* that while the German Empire and some other countries, as the result of their wise and salutary compulsory vaccination laws, are seeing smallpox almost wholly excluded from their borders, those neighboring lands, in which vaccination is optional, are still suffering from the old-time pestilence. The following table shows the number of deaths from smallpox in each million of inhabitants in each country named:

	1887.	1888.
Austria-Hungary	583.7	540.4
Russia.....	535.9	231.5
France.....	167.0	191.9
German Empire.....	1.8	0.8
Denmark	0.0	0.0
Sweden and Norway.....	0.0	0.0

—*Rhode Island State Board of Health.*

The Overworked Physician's Luncheon.

Dr. Allan McLean Hamilton contributes to the *Dietetic Gazette* some dietetic suggestions in nervous and mental diseases, one of which will interest all those busy practitioners who give themselves no time for a midday repast. His advice would be to lay in a goodly supply of fresh almonds, and to have some of them constantly within reach and to eat freely of them during the spare moments. He writes as follows:

Acting upon a hint given by my friend, Dr. Lauder Brunton, I have directed some of my patients to eat freely of fresh almonds, which are rich in oil and exceedingly nutritious, containing as they do fifty-four per cent. of fixed oil. According to Pavy they contain 2.677 of nitrogen and forty per cent. of carbon. It is a custom of Dr. Brunton and several other London physicians, when hurried and tired after their morning consulting hours, to make a luncheon simply of this kind. In cases of diabetes, when digestion is not too weak, it will be found that biscuits of almond flour are exceedingly nutritious and palatable and may take the place of gluten bread.

Mortality in European Armies.

Some curious details have just been published on the relative mortality among European troops during time of peace. The Spanish troops give the highest standard of mortality, and that not because the soldiers are weakly so much as that the sanitary arrangements are inadequate or neglected. The deaths represent 13 in 1,000. Russia comes next; but the interval is large. The mortality is about 9 in 1,000. Then follow the Italians, with 7.74. So far the series is almost as a shrewd observer might guess it would be. What follows is more perplexing and more interesting. Austrian, French, English, Belgian and German—that is the order. In round numbers, the deaths of Austrian soldiers are in the 1,000, 7; of French, 6; of English, a little over 5; of Belgian, a little over 4; and of Germans a little under 4. The ravages of consumption are enormously greater in the case of English soldiers than of any other nationality, and in this case the French are the most favored.—*Hospital Gazette*.

Advice to Families.

Dr. J. G. Johnson (*Brooklyn Med. News*) says: Pasteur has shown that in the still air of a room all germs fall to the ground. He constructed a box so that he could force disease germs into the air. After a few hours he introduced culture plates in such a manner that germs floating in the air would lodge on them. No colonies formed. Put these facts together: (1) That disease germs cling particularly to woollens; they are the great holders and carriers of the poison. (2) That in your house the disease germs fall to the ground, *i. e.*, follow the law of gravity. (3) Boiling water or a weak solution of corrosive sublimate kills every known disease germ. And what advice would you give your families?

1st. Banish all woollens, as far as possible, from the sick-room; there should be no carpet, no table covers, no covered furniture—only a rug or bit of carpet by the side of the bed that can be boiled or burned afterward. All blankets and bedding possible should be boiled for at least half an hour. As the child's flannels are especially liable to be contaminated, they should be frequently boiled to prevent re-inoculation from them; tell your mothers to get the large sizes, for they shrink with frequent boiling. All bedding that cannot be boiled should be sponged over with a solution of corrosive sublimate—1 to 2,000. As all germs fall to the ground, all projecting portions of the wood-work should be wiped off with a cloth moistened with corrosive sublimate; so, also, ought every place on which dust can lodge. A dusting brush should never be allowed in the sick-room, because it stirs up the disease germs into the air to re infect the people. The floors should be washed with a solution of corrosive sublimate; this has been demonstrated to be the most efficient of all germicides. That people should not drink it by mistake, the London Board of Health uses as follows: One-half ounce of corrosive sublimate, one ounce of hydrochloric acid, five grains of aniline blue, three gallons of water. As corrosive sublimate coagulates albumen, the acid is added to prevent that, and the blue water prevents

it being mistaken for water. As dirt is the great breeder of disease germs, the dust between the cracks of the boards should be well wetted to kill those lodged there.

The contagion of typhoid fever is in the stools; these should be disinfected before being thrown down the closet. As before stated, boiling water kills every known disease germ. Three times the bulk of the stool of boiling water kept in contact with the stool for half an hour will destroy all the germs in the stool. It is sure, and does not rot the pipes as many disinfectants do.

Educate your families up to these facts, and particularly to the fact that woollens are the greatest carriers and holders of disease germs, and the question that Dr. Storrs publicly asked at the meeting of the American Public Health Association will be answered: "Why do these contagious diseases cling to the homes of the rich so much more than the homes of the poor?" The winds of heaven visit the homes of the poor and dissipate those disease germs which cling to the carpets of the rich.

Trimming Noses.

The illustrations accompanying this article are taken from the *New York Medical Record*, in an article contributed by Dr. Roe. The pictures illustrate what can be accomplished by surgery in the way of transforming that prominent feature of the countenance, the nose. We reproduce them here, not only because they are interesting in showing what surgery can accomplish, but also because they show what wonderful change in the whole expression is effected by merely modifying the size and shape of the nose. The surgery consists in an operation by means of which the surplus tissue about the end of the nose is taken away, thus reducing the organ to better proportions. The *Medical Record* gives the details of this operation, but we will only say of it that it can be so cleverly done as to leave no noticeable scar or deformity. These cases are mainly remarkable in showing what a vast improvement can be brought about by a comparatively small and unimportant operation. Physiognomists have assigned to the nose some important evidences of character, and the snub



or pug nose has been looked upon as indicating weakness or lack of development. Since it is possible by the means indicated to bring about such marked changes in the facial appearance, it becomes natural to ask what possible effect the change may have upon the person's character. Will the improvement in the outline of the nose reflect upon the character of the individual and be followed by proportionate change for the better in that? Or, will it merely result that the practical physiognomist will be deceived in attempting to read the character of one in whom such a change has been effected by the removal of some of the physiognomist's important character signs?

Quinine.

A writer on the subject says: It is quite needless to take quinine as if it were an article of food in this climate, and its effect on all the organs of the senses is finally more or less destructive. The greater number of cases of deafness seeking relief in our hospitals, we are told by statistics, are caused by quinine. It also causes blindness and a pathological condition of the vital organs, especially of the heart. On the whole, I think it is well placed among the ten dangerous drugs. Of cocaine I cannot say much, except don't take it without a doctor's prescription. We have several accounts of instances in which it has caused the ruin of doctors who have tried it on themselves for experimental purposes. The cocaine habit, so far as we understand it, is like the morphine and absinthe habits united.

The moral of all this is, that when a person does not feel in normal health, don't dose indiscriminately, but go to a doctor. Before going to a doctor try hygienic measures. Eat regularly and do not partake of highly-flavored food. Condiments are, in truth, drugs that do not enter the system without producing some effect. If you are a smoker, reduce the number of your cigars daily, take frequent baths, and dress in loose-fitting clothing of the right weight for the season, and take all the exercise that comfort and time will allow. "The walking cure" is just now coming into fashion. It is a good cure for a legion of minor complaints that ordinarily people want to take drugs for.

A Remarkable Progenitor.

Were it not part of the records of the Berks County courts, we could hardly credit the history of John Heffner, who was accidentally killed some years ago at the age of 69. He was married first in 1840. In eight years his wife bore him seventeen children. The first and second years of their marriage she gave birth to twins. For four successive years afterward she gave birth to triplets. In the seventh year she gave birth to one child and died soon afterward. Heffner engaged a young woman to look after his large brood of babies, and three months later she became the second Mrs. Heffner. She presented her husband with two children in the first two years of her wedded life. Five years later she had added ten more to the family, having twins five times. Then for three years she added but one a year.

At the time of the death of the second wife twelve of the thirty-two children had died. The twenty that were left did not appear to be any obstacle to a young widow with one child consenting to become the third wife of the jolly little man, for he was known as one of the happiest and most genial of men, although it kept him toiling like a slave to keep a score of mouths in bread. The third Mrs. Heffner became the mother of nine children in ten years, and the contentment and happiness of the couple were proverbial. One day, in the fall of 1885, the father of the forty-one children was crossing a railroad track and was run down by a locomotive and instantly killed. His widow and twenty-four of the forty-two children are still living.

Useful Athletics.

A story with a pathetic leaning has appeared in a recent issue of a leading newspaper (says the *Medical Record*), detailing the case of a rich invalid lady who was suddenly reduced to poverty, and whose changed condition demanded the performance of her own household duties. As if, however, to prove that all evil is not unmixed with good, we are informed that by the forced exercise of her new functions at the washtub, the ironing-board and the cooking-range, she became strong, her aches disappeared, and her sleep was sound and refreshing. Although it was extremely sad that the calamity of forced work should have fallen upon such a delicacy of femininity as possessed by the unfortunate subject of this healthful moral, all of her friends stand ready to congratulate her on the change so radically wrought. Although the wash-tub, broom-handle, and scrub-brush are not in the category of apparatus for the treatment of nervous exhaustion and its thousand and one accessory symptoms, we should not be slow to take the hint of their indications. The drill of the broom-handle may yet be found efficacious in straightening spines, the wash-tub in expanding chests, the clothes-wringer and the scrub-brush in correcting misplaced wombs.

Prince Bismarck and Mr. Gladstone on the Effects of Modern Education.

Two great authorities on social matters have lately expressed their personal opinion on the results of modern education as to its effects upon the well-being of the population. Prince Bismarck thinks that higher education for the lower classes has been too widely spread, and in a recent conversation is reported to have said: "Overeducation in Germany leads to much disappointment and dissatisfaction; in Russia, to disaffection and conspiracy. Ten times as many young people are educated there for the higher walks of life as there are places to give them, or opportunities for them, in the liberal professions, to earn a decent living, far less wealth and distinction. Perhaps it is not quite the right kind of learning, too. What good does it do them? When they have gone through it, in nine cases out of ten, there is nothing for them to do, and their learning is worse than a superfluity to them, for it makes them discontented—nay, miserable." Mr. Gladstone takes a different view, but believes that classical education should only be given to those likely to profit by it in after-life. He is strongly desirous to promote physical and corporal education generally, and attaches much value to the training of the eye and the hand; for this purpose he urges that some branch of natural history should have a higher place in the modern theories of education than it has yet obtained. In these days, when many medical men see reason to believe that education in too many cases exhausts and injures the nervous system, in place of developing and strengthening it, it is interesting to know the opinion of great statesmen of experience. The question is a very serious one, and demands inquiry as to the effects of our educational system upon the brains of the young.

Dietetic Progress.

Astronomy means the laws of the stars ; gastronomy means the laws of the gullet. A grand dinner is a complicated affair, and has only been evolved by ages of civilization and culture. Primitive races eat whatever they can get and whenever they can get it. Nomadic tribes, with flocks and herds, establish regular needs, and discover the oldest gastronomic combination, bread and meat. The peasantry of civilized nations combine dishes together to make the "square meal," say meat, potatoes, and a relish with bread and butter. Cultured people gradually come to add two courses to this "square meal," one at the end called dessert, to help digestion ; the other at the beginning, the preliminary course or *gusto*, to whet the appetite. In a state of still higher refinement each of these courses falls into two parts. The "after-meal" comprises pastry and dessert ; the "mid meal," meat and game ; the "preliminary meal," soup and fish. But the height is reached in the grand symposium or banquet of nine courses : 1, *hors d'œuvre* ; 2, *potage* ; 3, *poisson* ; 4, *relevé* ; 5, *entrée* ; 6, *rôti* ; 7, *entremet* ; 8, *sucrée* ; 9, *dessert*. Nine courses, exclusive of punches and coffee ! Nine meals in one ! *Après nous le deluge*—indigestion, gout and biliousness ; exit the cook, enter the doctor.

Take Your Children to the Country.

I am sitting at the window of a city house (where necessity has compelled me to be, *for a short time only*, thank God, a sojourner), of a dismal, rainy Sunday afternoon, gazing at the narrow slit in the brick wall on the opposite side of the street, which, by courtesy, is called a window. And as I look and think how soon the servant will appear to bolt the heavy shutters on the outside of this slit, I cannot but think how like a tomb is a city residence. Four brick walls, with a few crevices, called windows, through which a very little of nature's air and nature's sun can struggle, to endeavor, unsuccessfully, to carry health and strength to the poor victims entombed therein. Fix your gaze steadily upon the front of a city house and give free play to your fancy. Will it not seem that mankind is trying to find out with how little air and how little sun it can exist ? The experiment is being answered ; we are finding out that humanity can *exist* with but little of these two agencies, but *such* an existence ; it is not living. Believe it as a fact, for fact it is, which a little inquiry among your friends will demonstrate, that while city-born and bred persons manage to move about, go to clubs, balls, parties, assemblies, to eat, drink and give external evidence of vitality, they almost never achieve any distinction in any walk of life. Look the subject up, and you will find that all the men and women who have made the history of this nation have been reared in the country. And when you have verified our assertion, hurry off to the country with your boys and girls, that you may give them a chance for a fair start in the race of life. It is a duty that you owe to those whom you have been instrumental in bringing into the world.

Light in the Sick-room.

Still a custom prevails despite all our sanitary teachings, says the *Tennessee Health Bulletin*, that the occupant of the sick-room in the private house should be kept at all hours in a darkened room.

Not one time in ten do we enter a sick-room in the day-time to find it blessed with the light of the sun. Almost invariably before we can get a look at the face of the patient we are obliged to request that the blinds may be drawn up that the rays of a much greater healer than the most able physician can ever hope to be, may be admitted. Too often a compliance with this request reveals a condition of the room which, in a state of darkness, is invariably one of disorder everywhere; foods, medicine, furniture, bedding misplaced; dust and stray leavings in all directions.

In brief, there is nothing so bad as a dark sick-room. It is as if the attendants were anticipating the death of the patient; and, if the reason for it be asked, the answer is as inconsistent as the act. The reason usually offered is that the patient cannot bear the light, as if the light could not be cut off from the patient by a curtain or screen, and as if to darken one part of the room it was necessary to darken the whole of it.

The Model Young Woman.

She is thus described by the Rev. Dr. MacGregor: "Our model young lady," says the preacher, "is enthroned—find the throne and you find her, for she is always on it; find her scepter and you find her, for she always holds it; find the jewel of modesty and you find her, for she always wears it on her brow. Looking upward from the foot of her elevation, where we stand, I see that we must pass through five stages to reach her throne. Our model has passed over each, and is above the enmities and jealousies, the storms and cyclones of the social world."

The first circle Dr. MacGregor describes as a part of her religious ability and usefulness—physical culture. Fashion he depicts as a great scourge around it, referring to the absurdities of extravagant fashion. The model young woman, he says, will scorn anything in fashion that will destroy her health, habit or happiness.

"Usefulness is a practical circle in view of the 200,000 young ladies in this country who never broiled a steak or baked a loaf of bread," declares the preacher. "No matter how much is lavished in supporting a home, sooner or later a crisis arises in the kitchen—and then comes another crisis with its mistress. The model young lady will drop on that crisis like a hawk on a June bug and stand there mistress of the situation." In the circle of common sense Dr. MacGregor discovers a scourge in the shape of obscene literature, which blights the souls of young women. Character forms the fourth circle, which the preacher says is everything in this world. "Christian life" he upholds as the highest circle. She who reaches it is the child of a King—all other graces would not lift her to the grade of model.

Dirty Car Straps.

A lay contemporary, commenting on the fact that an investigator has recently found the germs of disease adhering to the straps in street cars, by which passengers aid themselves when standing, cynically remarks that it is a marvel how persons live at all when we consider how many sources of danger to health and life are continually being discovered by scientists. Without being pessimistic, we would say that we do not think that the mass of humanity do *live*; they merely *exist*. There is a vast difference between the mechanical acts of existence and the superlative delights of living; the former found generally in humanity, the latter vouchsafed only to the hearty, healthy man. Look about you and tell us how many of your fellow-citizens, or countrymen, you believe really enjoy the possibilities of humanity; how many merely drudge through life, imperfect machines, doing imperfect work, and how much of this imperfection of humanity is due to the results of the aggregation of such seemingly trivial causes as filthy car straps. To really live, man must be natural, and to be natural he must love nature, and that he may love nature he must abhor filth, whether it be on a car strap or anywhere else. We are not bacteria-mad, but we are ready to believe that filthy car straps may be one of the almost innumerable real means of conveyance of disease from one pair of diseased hands to another.

Eating Air.

Dr. E. Cutter, at a meeting of the American Medical Association, said that air is food; mineral food at that, as water is mineral food; his definition of food being any substance from without taken into the human body, which becomes a normal constituent part of that body. Then, as the oxygen and nitrogen of the air become component parts of the body they are food. This idea was an old one. Once, in going from New York to Boston, he sat near a man in the cabin who had open on his knees a book in Hindostanee, and in his hands he had an open book in French. He was a missionary from India, and spoke twelve languages. On being asked whether he thought English would be the universal language, he said, "No, it is not expressive enough. For example, we say in English, 'A man walks out, and a dog walks out;' but the Hindostanee language puts it, 'The dog walks out, and the man goes forth "eating air."'" This expression is three thousand years old."

Again, the same idea is met with in Plutarch's Lives. A late account of the gypsies states that they every morning go out early and inhale full breaths, hold them, pound their chests hard in expiration, and then inhale deeply again, and so on. This they call "eating air." He said further that he never could believe that nitrogen was an inert substance in the air. Just as the false vocal cords were denounced as almost useless things and hence called "false," and as it had been found out that they were as active as the true vocal cords in the control of the expiration, so he thought that some time the active function of nitrogen in the air would be found out. The amount of nitrogen consumed by the human race daily was enormous and could not be overlooked.

Sleeping Between Blankets.

There are some who think it well to sleep between blankets, seeming, in some cases, to imagine that there is some special benefit to be gained by the close contact of the wool of the blanket with the body. We think this opinion to be erroneous. We must not forget that the heat of the body is generated within, and that it is the function of clothing to prevent its too rapid dissipation into the surrounding atmosphere. The body covering does not make, it merely retains, the vital heat. When asleep at night, all the vital functions, heat-making among the rest, are at their lowest ebb; hence it is necessary that we must have coverings that the small amount of heat generated may not be too rapidly lost. The function of the bed-clothing is a mechanical not a chemical one. Such being the case, it must be evident that there is no special virtue in the proximity of a blanket to the body. Admitting, then, that there is no advantage, we must, at the same time, claim a great disadvantage on the score of cleanliness. The body will soil that which comes into contact therewith, and we must therefore hold that a sheet, which can be readily washed, should be the first covering, over which we may have enough blankets to make us as warm as we wish. This may seem like a small matter, but it is by no means an unimportant one.

Teeth Germs in Infants.

The development of teeth germs from infancy to mature life, a writer in the *Pittsburg Dispatch* thinks, is one of the most interesting phases of human growth. Pass the finger along the tiny jaw of the newcomer. Not only is there nothing which presages future teeth, but the jaws themselves seem too delicate and frail to become the sockets for such hard-working portions of the anatomy. Yet we are assured that there are fifty-two teeth germs hidden there. Twenty of them are for the temporary teeth, with which in due time the child will begin to gnaw or chew his way through life; the others include the permanent set and the molars, none of which begin to make their presence known until the child is six years old, and the "wisdom" teeth do not usually appear until about the age of eighteen.

The little pulp germ grows and develops till it approximates the shape of the tooth it is to become; then it begins to calcify, forming the dentine part of the crown, while the enamel is deposited by an independent process. The surface of the crown attains its full size before the process of elongation commences. Then gradually it pushes its way outward through the gum, absorbing its tissue as it advances till the pure white enamel peeps out, to the mother's great delight.

The process of "teething" is invariably one of disturbance, especially if the outer membrane or skin of the gum proves tenacious. In this case it should be lanced—an operation which is humane, in that it relieves the discomfort of the child, and is entirely harmless, as there is seldom any hemorrhage worth the name, and if there should be a slight flow of blood it readily yields to simple treatment. The application of a dust of powdered alum is usually sufficient.

An Industrial Use of Microbes.

Dr. Neilson, of Norway, says that the Norwegian fisherfolk have for more than five hundred years used disease germs in catching whales. A few miles from the town of Bergen there is a narrow inlet of the sea into the mouth of which whales make their way every season. When a whale is discovered in this place the alarm is given, and the fishermen put out in their boats, drive the whale farther up the narrow bay, and stretch a net across the mouth of the inlet. Through this the monster could easily break, but he does not. Then they proceed to capture him and bring him to land. The animal, however, is twenty or thirty feet long and very strong, and with their primitive implements alone this cannot be done. They therefore inoculate the whale with the poison of an infectious disease, and only after he is weakened as the result of the disease do they try to kill him. After the whale has been inclosed, the bowmen put out, and when he comes to the surface to breathe, they shoot infected arrows into him and withdraw. After twenty-four or thirty-six hours, the whale becomes less lively in his movements and comes to the surface often to breathe. Then the real battle begins, and after driving ten or twelve harpoons into the whale the fishermen are able to land him. When the arrows are pulled out of the wounds, many of the disease germs cling to them, and thus render them effective as "death arrows" when further used. And thus the catching of whales goes on year after year, and has gone on for five hundred years.

A Reflection upon Doctors, Mortality and Athletics.

Our esteemed and reflective contemporary, *Life*, has been engaged of late in certain contemplations upon mortality and death (says the *Medical Record*).

In re the subject of sickness, it wonders why Mr. Richard Croker, whom the doctors pronounced incurable, incontinently got well; and it deduces some conclusions unfavorable to the certainties of medical science. Perhaps its reflections are not altogether without justice, although medical men are, we think, particularly careful in giving positive unfavorable prognoses. When given, they are generally correct, for most fatal and incurable diseases are readily recognized. We must believe that in the case of the eminent statesman above referred to there is a mistake. Either the doctors did not in fact say he was incurable, or else his time will come later. We trust Mr. Croker will not forget what he owes to the science of prognostics and the stability of professional reputation.

But *Life* is also puzzled over the careers of the late Cardinal Newman and John Boyle O'Reilly. The former, a frail, slight man of infirm constitution, but despite this he lived to a very advanced age; the latter was a man of splendid physique, who kept his system in training by physical exercise, athletic sports, and followed all the suggestions of modern physical culture. Yet he died in the prime of life. Shall we not, then, live quiet, ascetic lives, ignoring the body and cultivating the spirit? or shall we cultivate both body

and mind? The latter course is the one so much commended to-day; yet it is not a sure passport to longevity, as many cases prove. In fact, the brain-worker is better if he lives a regular, temperate life, and pays no attention to the development of his muscles. A little walk, some fresh air, and sound sleep are all he needs. Some people, to be sure, can be athletes and do brain work also, but it is not the rule. A sound mind should have a sound body, but it does not need herculean muscles. The best athletic work is done by growing boys and adolescents, who have an extra supply of vitality. When they have matured, and undertaken the responsible work of life, they speedily drop out of the championships. And the lesson we would draw from the opposite cases brought up by *Life* is, that athletics are not needed by brain-workers, and will, if carried to excess, shorten life rather than lengthen it.

The Curve of Health.

Oliver Wendell Holmes says in the *Atlantic Monthly*: Let me tell you one thing. I think if patients and physicians were in the habit of recognizing the fact that I am going to mention, both would be gainers. The law I refer to must be familiar to all observing physicians, and to all intelligent persons who have observed their own bodily and mental conditions. This is the curve of health. It is a mistake to suppose that the normal state of health is represented by a straight horizontal line. Independently of the well-known causes which raise or depress the standard of vitality, there seems to be—I think I may venture to say there is—a rhythmic undulation in the flow of the vital force. The “dynamo” which furnishes the working powers of consciousness and action has its annual, its monthly, its diurnal waves, even its momentary ripples, in the current it furnishes. There are greater and lesser curves in the movement of every day’s life—a series of ascending and descending movements, a periodicity depending on the very nature of the force at work in the living organism. Thus we have our good seasons and our bad seasons, our good days and our bad days, climbing and descending in long or short undulations, which I have called the curve of health. From this fact springs a great proportion of the errors of medical practice. On it are based the delusions of the various shadowy systems which impose themselves on the ignorant and half-learned public as branches or “schools” of science. A remedy taken at the time of the ascent in the curve of health is found successful. The same remedy taken while the curve is in its downward movement proves a failure. So long as this biological law exists, so long the charlatan will keep his hold on the ignorant public. So long as it exists the wisest practitioner will be liable to deceive himself about the effect of what he calls, and loves to think are, his remedies. Long-continued and sagacious observation will, to some extent, undeceive him; but were it not for the happy illusion that his useless or even deleterious drugs were doing good service many a practitioner would give up his calling for one in which he could be more certain that he was really doing good to the subjects of his professional dealings.

The Ventilation of Churches.

Nowhere have the problems of ventilation been found to be more difficult of solution than in large public buildings. We might say in regard to many, if not most of these, that in this particular matter bad is the best result that has been attained. It must also be admitted that the state of churches generally proves the rule above stated, but not by way of exception. We may well ask, Why is this? Surrounded with spacious windows, furnished with ventilating panes, with several doors, and with a high and arched roof, why is it that their atmosphere during times of worship is so often offensively close? In different cases we should probably find different structural deficiencies contributing to this result, with, however, the same consequence in all—defective aeration. One, if not the principal, fault in construction in many of the older buildings is the want of outlets, or of a sufficient number of them. Such openings as do exist are better fitted to act as inlets than as exits. In buildings thus constructed a change for the better would be most fittingly inaugurated by the formation of two or more large roof outlets with revolving cowls. The allotment of floor space is also an important consideration. This, however, is as a rule contrived with a reasonable regard for health considerations. It is only in the event of overcrowding that all individual rights are overwhelmed in the common crush, and wholesome breathing air becomes more scarce than standing room. The gallery system, also, if adopted on any considerable scale, is open to adverse criticism. By accommodating more sitters it necessarily increases what we may call the breathing surface, while at the same time it lessens the available air space. If constructed at all, the gallery ought to be of the lightest description compatible with due stability. The correction of the evils we have thus briefly touched upon, and especially the formation of roof outlets to promote the escape of heated and impure air, will go far to obviate such occurrences as that of ladies fainting in church, which under present conditions is only too common.—*Lancet*.

State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania.

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PLACE OF MEETING,

Supreme Court Room, State Capitol, Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Thursday in May, July and November.

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COMMUNICATIONS.

Hidden Causes of Disease.

BY GEORGE G. GROFF, M.D.,
Of Lewisburg, President of the State Board of Health of Pennsylvania.

It is a popular belief that throughout their existence in this world, men and women are doomed to continually combat *Dirt*, *Disease* and the *Devil*. Giants in *Theology* have long taught the people how his Satanic majesty is to be met and routed, only, however, to reappear with renewed energy for a fresh conflict. The fathers in Medicine have taught how disease is to be met, but for 3,000 years disease has stalked at midday among the children of men, slaying alike the aged man and the innocent babe at its mother's breast. It is only recently that intelligent men have begun to understand the causes of disease and the conditions which make it possible for disease to exist and to spread, and still more recently they have secured the knowledge which will, in time, banish many common diseases altogether. In past centuries the plague, the black death, the sweating sickness, the cholera, the smallpox and other diseases swept over Europe repeatedly, destroying people by the thousands and even by the millions, in some cases leaving not more than one-tenth of the people alive; in other cases whole districts were abandoned and became the abodes of wild beasts. But these diseases, with scurvy and typhus fever (jail fever), are nearly unknown now in civilized communities; and we are just on the point of banishing in like manner the scourges of childhood, diphtheria, scarlet fever, measles and whooping-cough, and the plagues of manhood, pulmonary consumption and typhoid fever; we believe that we have knowledge enough to-day to enable us to live and avoid the greater portion of the diseases to which the human family is subject; and we fully believe, with the old philosopher, John Locke, that "Prevention is better than cure, and far cheaper."

It is in and about our homes that the most of the causes of disease will be found, and because most of us have failed to detect them, they are here called "Hidden Causes of Disease." Let us begin our search in the cellar and proceed through the house to the garret.

As a rule, the most dangerous place in an American home is the cellar. It is often damp, and too often not thoroughly clean. Damp, foul odors, day by

day, arise from the unventilated and dark cellar, and pass to every room of the house, carrying the seeds of rheumatism, diphtheria, pneumonias, colds, consumptions, etc., to the inmates. Many families, who wonder why it is that one of the children is always sick, could discover the reason by going into the cellar. Dr. R. C. Kedzie, of the Michigan Agricultural College, thus speaks :

“Go down into the cellar and examine the foundations of life ; see whether the cellar is dry and well ventilated, and the air sweet and wholesome ; that no vegetables and useless rubbish of any kind are left to rot in your cellar. Or do you find all kinds of things going to decay, the cellar wet, the walls slimy, mould spreading over everything, and a close, stifling odor pervading the air of your cellar ? If these inanimate things could give voice to their warning, what a sound would startle our ears in hundreds of cellars in our State ! ‘Here lie in ambush diphtheria and membranous croup, the destroyers of childhood ; and typhoid fever, that strikes at all ages ; here lurk the seeds of consumption to bring forth the slow but sure harvest of lamentation and woe !’ ‘For the stone shall cry out of the wall, and the beam out of the timber shall answer it.’ But though these voiceless things speak no word of warning, they hang out the flag of danger ; the spotted mould and fungus attacking the timbers of your cellar show that destructive agencies are at work. Why, man ! death is gnawing the very sills of your house, and shall he spare these tender morsels, your children ? These damp, musty, mouldy cellars are the seed-beds of disease. Do not hope to preserve health over such a charnel-house. Do not leave vegetables to rot in your cellar to spread rottenness through all your house. The wet cellar foretells wet eyes up-stairs. Drain it, and underdrain the surrounding soil, so that your cellar shall always be dry. Drive out all mustiness and mould by ventilation and by *abundant* use of whitewash. Make the air of your cellars at all times sweet and wholesome, because much of this air will find its way into the rooms above. But if you neglect all of these things, and the Angel of Death spreads his dark wings over your household, do not charge the effects of your nastiness and laziness to a very mysterious Providence ! ‘A prudent man foreseeth the evil and hideth himself ; but the foolish pass on and are punished.’ The cellar should be as *dry*, as *clean*, as *sweet* as any room up-stairs. It should be whitewashed, not once a year, but, if at all musty, once a month. Open all its windows and ventilate completely.”

You may wonder how a dirty cellar affects the dwellers in the rooms above. It is because the disease germs, which are in the air of the cellar, pass with that air into the rooms above. When the fires are lighted in winter, the cold air on the outside presses into the cellar, and the air there passes up into the house. There is no such thing as keeping foul air in the cellar. It *will* go throughout the house. The only thing to do in the matter is to keep the cellar clean and dry, else *fevers, malaria, croup* and *consumption* may be expected in the rooms above.

Dampness and cold in the living-rooms are causes of disease. Stone houses improperly built, houses built on damp, undrained soil, and houses made damp by too much shade are well known to be unhealthy. The cellar must be dry,

or the rooms on the first floor will be damp to an injurious extent. All stone and brick houses should be "furred out," that is, have an air space of a few inches between the plastering and the wall. This air space will prevent the moisture from the walls passing into the house, and so give dry rooms. Too much shade about houses is a cause of dampness. Trees should be in the yard, but not overshadowing the house. Dampness will undoubtedly act as an exciting cause of rheumatism, malaria, heart disease, etc. Excessive cold is also a cause of disease. It is especially deleterious to the young and the aged. In weeks of great cold the death rate frequently doubles in the city of London, and it is discovered that this extra number of deaths is mainly from the very young and very old. Excessive *heat* also is a cause of disease, as seen in the summer months. Much relief may be gained by constant attention to proper clothing, both in hot and cold weather.

In the kitchen we examine the drain and sewage pipes. These are often inlets for poisonous gases. Even dish-water will coat a drain with foul substances, which will decompose and send into the house most dangerous gases. Every drain pipe should be trapped, but that is not enough. Proper disinfectants should be dissolved in hot water, and at least once a week be poured into the drains. The best substance for this purpose that I know of is green vitriol. In towns and cities connected with a general system of sewage, everything that is foul and death-bearing *may* enter through the sewage pipes. Here, especially, we may look for *typhoid fever* and *diphtheria*, as also *malaria*.

There are other elements of danger in the kitchen. The particles of food which adhere to the vessels, pans, dishcloths, etc., decompose and form breeding spots for disease germs. All who have had any experience at this point know how necessary it is to be constantly on the guard here. These disease germs, from their homes in the filth, get into our food and often produce the most serious results. A poison, called tyrotoxicon, was discovered a few years ago by Dr. V. C. Vaughan, in cheese, and it is now known that cheese and ice-cream poisoning are caused by this poison, and Dr. Vaughan thinks it is the sole cause of true cholera-infantum, and, possibly, also of the milk-sickness of new countries.

GARBAGE AND SLOPS

from the kitchen, when thrown around the yard in a slovenly manner, decompose, and emit gases poisonous to man, and form at the same time breeding beds for poisonous germs. In rainy seasons, a large portion of this filth often finds its way into the well or cistern. Kitchen slops and garbage are doubtless often the cause of malaria, diarrhoeas, dysentery, and more serious troubles in country and village homes. In towns the garbage should be removed daily, if possible, and in all cases before it has time to decompose. The pipes which carry off the slops from the kitchen should be securely trapped that no foul gases enter the house through them. In country places, villages, etc., the slops from the kitchen should be carried at least 100 feet from the house and the well, in glazed pipes, securely cemented at the joints, and can then be used to

fertilize the garden plot or the fruit trees. The solid garbage, as parings, etc., may be thrown into a pit in the garden and kept covered with earth until decomposed, when it may be applied to the soil.

In the living and bed-rooms we find air foul from want of ventilation. In some houses this is so marked that the close, musty odor, which we always experience in such places, has received the name "house odor." It should never be present. The air indoors should be nearly as pure as that outside. At any rate, it should be too pure to have any odor. There is a great deal of unwholesome matter thrown off from the human lungs, and air in close rooms and houses often becomes decidedly deleterious to health. This is best made clear by some striking examples, which will be taken from the highest authority, *Carpenter's Human Physiology*. Dr. Carpenter relates on pages 411 to 414, Phila. Ed. of 1876: In 1756, in Calcutta, India, during the native insurrection of that year, 146 Europeans were, by the natives, thrown into a room twenty feet square and the door closed. The room contained but two small windows. The prisoners remained here all night, and in the morning 123 were dead, and of the surviving 23 several afterward died of low fevers. This is known in history as the "Black Hole of Calcutta." In 1848, the ship *Londonderry* encountered a storm at sea. The passengers becoming alarmed were, by command of the captain, thrust into the cabin and securely fastened there, where there was but seven cubic feet of air-space to each person. In a few hours seventy of the passengers were dead. In Dublin Lying-in Hospital, before ventilation was introduced, 3,944 persons died in four years. After ventilation was employed, the death rate was reduced to less than one-tenth.* In Glasgow Barracks there were fifty-eight cases of fever in two months. The barracks were placed in good sanitary condition, with means of ventilation, and but two cases of fever occurred in eight years. About a century ago, about twenty-three out of every twenty-four infants in the London workhouses died during the first year, when, after a Parliamentary investigation and mainly better ventilation, the number of deaths fell from 2,600 to 450 per annum.

In Iceland, where the houses have almost absolutely no means of ventilation, and the odors arising from the herding together of men and sheep, and the fuel of fish refuse and sheep manure, are horrid beyond description, the mortality among the children is terrible. Although the number of births is about equal to the average elsewhere, yet the population is almost stationary or decreasing, for a great part of the infants die from the fifth to the twelfth day after birth from an endemic disease generated by the foul atmosphere of their habitations. A similar condition of affairs exists in the Hebride Islands.

By these extended illustrations we do not mean to say that foul air is, in our homes, the principal cause of disease, for we do not believe it; but we do believe that to maintain that high degree of bodily vigor which will throw off disease we need plenty of fresh air. Into many of our homes this enters without any special effort on our part, but the point to remember is that every part of the house should have plenty of fresh air every day.

*In another hospital in the same city, without ventilation, one-fifteenth of all the patients admitted died. After ventilation but one-eightieth died.

Pantries and passages should receive the same careful attention as the cellar. Mould, dampness and foul smells are never to be neglected. Ventilate every part of the house thoroughly, and if possible almost daily. You cannot afford to keep the spare room and the parlor shut up until they become musty. Sunlight and fresh air are the best disinfectants known, and the cheapest; where they cannot enter the doctor will. Especially should the *bed-rooms* and the *beds* be thoroughly exposed to the sunlight and air. Bed-clothing should be hung over the chairs for an airing at least an hour every morning. Ventilate, ventilate, ventilate. It is much better to have faded carpets and faded walls than *faded children*.

To foul air we may attribute much malaria, consumption, sick and jaded women and unhealthy-looking children.

Dust is a prolific source of disease; at least, that dust which is produced in and abounds in human habitations. Dr. T. M. Prudden, of New York City, has written an interesting little book in which he graphically describes "Dust and Its Dangers." In this dust of our homes, Dr. Prudden tells us, are found in great numbers the *germs of seeds of bacteria, yeasts and moulds*; and of these, bacteria are by far the most important. They are minute, rod-like bodies, and so small that millions of them could cluster upon the point of a pin. It is these bacteria which are now believed to be the *direct agencies* which produce most diseases. They abound in filth and dampness. The air in the morning is purer than at night, because these organisms during the night settle to the ground. The air is purer in the country and in mountains than in towns and cities, because these bacteria find no food, or but little, in such places, and in the winter season because they cannot multiply in a too cold atmosphere, though in a heated house there may be no diminution to their numbers. As many as 270 of these bacteria have been found in a quart of air in a hospital and 200 in a quart of dirty air in a school-room.

It is now believed that smallpox, scarlet fever, diphtheria, measles, whooping cough, typhoid fever, consumption and other common diseases are produced by specific forms of these bacteria. How careful, then, we should be to limit their number. When rooms are swept it should always be with the *windows wide open*. When they are dusted, it should always be with a wet or damp cloth, so that the dust may be gathered up and destroyed. The sweepings should be burned and not thrown into the yard.

In consumption the germs are in the matter coughed from the lungs. This should always be discharged on paper and burned, and never allowed to dry and become dust. It is dried sputa from consumptives which spread this disease, and we encounter it everywhere, on the streets, in the school-houses, in churches, in public halls. The only safety is in burning it or discharging it into powerful disinfectants. In scarlet fever, smallpox and diphtheria the germs are in the discharges from the head and mouth, from the bowels, and in the skin which is shed from the body. If all these discharges are burned and the patient kept in one room until thoroughly well, and this daily dusted with a damp cloth, the disease *can* be confined to one patient and one room. In typhoid fever the

germs are in the discharges from the bowels, and through carelessness get into drinking-water, and so spread that disease.

It is believed that consumption kills 91,000 persons in the United States each year, and these mainly in the prime of life, as the age seems to be about 37 years. Think of the anguish, the suffering caused by this one relentless destroyer, and then say whether or not care should be exercised in reference to dust.

We will now look at the surroundings of the house. It is a damp, chilly day, but the ground is not frozen. We cannot step from the house except *into the mud*. Here is a cause of trouble. The women and children get wet feet every time they go outside the house. Those damp feet are a cause of sickness. Good board, stone, or brick paths should be about every home, so that there would be no need of damp feet when one is called outside the door.

From the house we go to the well or spring. How often the Angel of Death dwells in the well at the farm-house. It is true that sanitarians have come to look upon *all well waters with suspicion*. This is because they are so generally contaminated. Typhoid fever is especially a disease of the farm, where it ought to be practically unknown. The diarrhœas, dysenteries and typhoid fever, which break out in the late summer, and some years cause so much sickness and many deaths, are due to the low water in the wells at that time of year.

Wells are the most dangerous sources of water supply, for very few wells in old settled districts are safe from surface pollution. In towns long founded, well water is almost certainly contaminated and unfit for human use. In the country, wells should be properly located so as not to receive surface drainage, especially not from the barnyard or privy. They should be walled up and so securely covered that mice, rats, toads, frogs and insects cannot enter and perish in the water, thus making it unfit for use. It has been the writer's experience that few wells are securely enough protected from small animals, while very many are contaminated from the barnyard, the privy, or by the refuse from the kitchen. It should be kept in mind that *very impure water is often bright, sparkling and tasteless*.

Impure water affects domestic animals as well as man, and when used by cows contaminates seriously the milk. Milk also has great power to absorb deleterious gases and germs from the air (and thus becomes a common carrier of disease). A careful man will pay as much attention to the source and quality of the milk used by his household as to the water supply.

The privy is not far from the well, and is a frequent cause of water contamination. Underground passages are often made, so that there is easy communication between the privy and the well.

Water-closets and privies should receive close and repeated attention. *Foul odors are Nature's signals of danger*. Water-closets should be carefully constructed, *kept at all times absolutely free from odor*, and always plentifully supplied with water.

Where privies are used, they should be *built above ground* and kept constantly free from smells by a liberal use of dry earth or a solution of cop-

peras. They should be emptied whenever the contents become difficult to disinfect in a thorough manner, which will vary with the season, but should be several times a year. Privies should never be placed under the same roof with the house, and never near the well or cistern. The privies with underground pits, which are never cleaned, are pits of death to the present and to future generations. In all civilized communities, they should be declared nuisances from their action in poisoning water and air.

Since this article was first prepared, a most important and convincing paper has been published by Dr. D. B. D. Beaver, of Reading, Pa., in which he shows that comparing the rural population of Berks County, with the city population of Reading, there are almost exactly twice as many cases of typhoid per 1,000 people in the country as in the city. He shows that this disease comes from impure water, and that the privy is the cause of this contamination.

In conclusion, we desire to call attention to two other prevalent causes of disease in our State. One is public funerals in case of contagious diseases. It is largely through these public funerals that diphtheria, scarlet fever, measles, etc., are spread throughout communities. When such diseases exist in any community, there should be as little communication as possible between the sick family and the neighbors. One nurse is better than a new one each night, and when death occurs, the funeral should be *strictly private*; and when notices are inserted in the paper, they should state the disease, as from diphtheria, in order that friends may remain away from the funeral. One single illustration will be given to show the importance of this precaution:

"About twelve years ago, while pastor in a town of Western Pennsylvania, malignant diphtheria became epidemic. A child died of this disease in a house opposite the public school building. Burial did not take place until the third day after the occurrence of death. During a considerable portion of that time the remains were exposed to public gaze. More than a hundred pupils of the school availed themselves of the opportunity to linger around the corpse and take a last look at the remains of their departed schoolmate. The disease spread. In the town and surrounding country at least one hundred and fifty persons were infected with it. About forty died. This will not be surprising, when I assure you that all the funerals were public. Whether held in the house or in the church, in most instances crowds thronged to view the remains and aided in spreading the disease. There was no Board of Health, and a majority of the people were doubtless unaware of the danger to the living in their efforts to show respect for the dead."

It is noticeable in Pennsylvania that our burial grounds are frequently much too near the dwelling places of the living. How frequently we find the graveyard right in the midst of the village. From a sanitary point of view this is wrong. Some quiet spot, away from the village a mile or more, so that neither air nor water will be contaminated, would be the proper location for a burial place, and this should always be borne in mind in the selection of new grounds.

The Advantages of Physical Culture.

BY THE EDITOR.

OF course, no one questions that physical culture is something to be encouraged. There is considerable difference of opinion as to the good or bad results of what we might call "excessive culture;" but, to our way of thinking, there cannot be but one opinion as to the advisability of rational physical culture. Not only will it vouchsafe health, but it will insure also beauty, in the truest sense of the word—that is to say, it will serve to make of our bodies the most pleasing spectacle of which humanity is capable. A man or a woman may be "pretty" without being healthy; but to be "fine-looking," and at the same time not healthy, is an impossibility. The man or woman who will rationally resort to physical culture must be "fine-looking" (even though the face may not be "pretty") and will be healthy. What more can we ask, and what more have we to desire? To be "fine looking" and healthy ought to, and certainly will, insure the happiness of any reasonable person, and anyone who is both healthy and "fine-looking" will have no reason to be otherwise than reasonable. Rational physical culture does not imply the consumption of time. Of course, if one can afford to systematically visit a gymnasium that is presided over by an intelligent superintendent, so much the better; but it is not necessary. One can, without any inconvenience or expense, practice and secure all the physical culture that is necessary. For instance, it will take no more time, and cost nothing, to walk correctly than to walk incorrectly. Yet how few persons ever give a second thought to their method of walking, while correct walking not only does much to make a person "fine-looking," of itself, but also tends to react favorably upon the physical welfare of the whole body.

"Probably there is not more than one person in a hundred who carries the body in a graceful manner while walking," says Prof. D. L. Dowd, of New York. "Many do not care about appearing graceful, especially those who have no very vivid sense of the beautiful in nature. They may dispute this assertion, and claim to admire nature's handiwork, when, in truth, their admiration amounts only to a desire to be thought to possess good taste; of this they give ample proof.

"When I stop to think that man is the most beautiful creation of nature, and, therefore, should receive the most thorough and careful attention, before all else, in improvement, and that if one has a really genuine admiration for the beautiful in nature, it does seem to me that the possessor would not, or could not, be so careless of this superb work intrusted to his keeping. Many have false ideas of grace in walking, gained from association or habit, and still there are others who may be said to walk in a graceful manner, but who do not appear to, because the body is not graceful of itself. To be truly graceful in action you must first be graceful in form. Before commencing this exercise, take the position of Fig. 4.

HOW TO BECOME GRACEFUL IN WALKING. (*See Figs. 1 and 2.*)

“Stand with feet together, the body erect, the hips drawn back, the chest projected, the shoulders drawn back, the head erect, and the chin drawn in (see Fig. 4). Now set the right foot back about twelve inches and a little to one side of the left foot, with the ball of the foot *only* pressing the floor lightly (see Fig. 1); then raise on the ball of the left foot, and at the same time swing

FIG. 1.



FIG. 2.



Grace in Walking.

the right leg forward (see Fig. 2), keeping the knee nearly straight, and pitching the body forward at the same time; then perform the same movement with the left leg. For grace, the body, in walking or in repose, should incline slightly forward. If the weight is pitched forward by bending the body slightly at the hips, it is much more easily propelled than when it is pitched backward.

“The idea in practicing this exercise is to accustom you to rise easily and gracefully on the ball of the foot at each step, so that the leg which is passing forward will not be made to bend so much at the knee, which appears very ugly, and especially so in a lady, for each time the knee is projected against the dress it causes it to bob out at every step. But it should pass forward in a more graceful line, and set squarely on the floor, instead of tipping the shoes upward and the heel downward (which sounds like a horse walking across the floor), as is generally done when the knee is much bent.

“In the practice of this exercise you must be careful, when rising on the ball of the foot, that you do not make a quick, jerky movement of it, and so give the appearance of bobbing up at each step. The movement should be a

gradual, rolling one, from the heel to the ball of the foot, and in a way that the body will appear to glide along.

"With a little practice daily of this exercise you will soon be able to walk gracefully and easily, and will find that the calf muscles will increase in size, for they are the muscles that raise the weight of the body and poise it on the ball of the foot; therefore, the more you walk in this way the better you will develop the calf."

Is it pleasing to the eye to see a man or woman with the stomach protruding and the shoulders round and stooped? Yet how many allow themselves to assume this awkward and unhealthy attitude!

* "Really graceful figures are objects that we very rarely see at present. As a race, the American people, in each succeeding generation, seem to be losing in physical grace, both in figure and in movement, even though our schools for teaching these accomplishments are tenfold more numerous than in the days when the great majority seemed to be possessed of bodies that had beauty and grace in every outline, and each movement was the perfect poetry of motion. Only now and then do we observe this to-day. But let us be hopeful that a great change will take place at a no very distant period.

"Let us analyze a little. In the first place, what is grace, and what is the use of possessing it? Let me answer the last question first. If we have an educated sense of the beautiful, and almost all teachings have a leaning in this direction at the present time, then we are pleased to look upon grace and beauty. It imparts to the beholder a delightful emotion of pleasure, and to the possessor the consciousness of being a silent instructor in the artistic, and such lessons oftentimes carry conviction, and are more productive of good results than oral teaching.

"I think you will agree with me that anything that will delight the senses is most beneficial to our physical being, and that when we are bettered physically we are also bettered mentally and morally; hence, I claim this as one of the many good reasons why we should possess grace and beauty.

"If we happen to be less sensible to its charms, others may not be, and we thus may help some who in some way may need it more.

"What does grace imply or signify? In short, what meaning do we try to convey when we speak of physical grace? Do we mean that it is beauty of face or figure, of the muscular system, or of the bony structure which delights us? Possibly we mean to convey the idea that it is all of these combined that produce the grace we notice in the light tread of the panther and the majestic pose of the lion's head, or, in fact, almost all animal creation not subject to the rule of mankind.

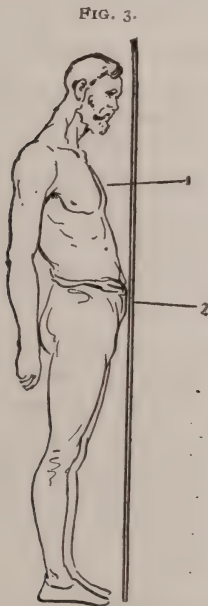
"In the brute it is undoubtedly true that all these beauties united produce graceful motion; nature has so decreed it. But in mankind this rule does not hold good. (The why is not easily explained.)

"We may be fully developed without appearing to reach perfect grace. If

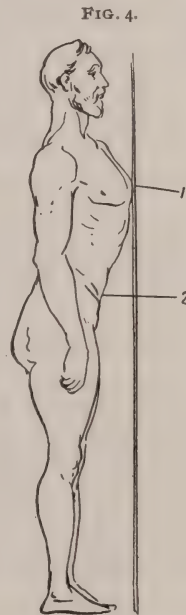
* From "Physical Culture," by Prof. D. L. Dowd, of New York.

each muscle were dissected it might prove to be the perfection of development, and each separate bone also bear the same inspection; and yet, such perfection of structure, by being carried out in an apparently awkward and slovenly manner, might appear anything but graceful.

“Why is this? One reason is that certain of these muscles, by being neglected, have lost their vitality and refuse to perform their designed functions, and the body is allowed to be pulled to one side or the other, causing, in time, curvature of the spine; or the head be allowed to pitch forward, because the muscles in front of the neck are stronger than those on the back, producing an



Incorrect Position.



Correct Position.

overbalancing of power, and the erector muscles of the back being used less than some of the muscles of the front of the body, the hips are drawn forward, giving a very awkward curve to the spine (see Fig. 3). All these defects can be corrected by the practice of scientific physical culture.

“Fig. 3 shows the position in which ninety-nine out of every one hundred persons stand.

“Another reason why one may be fully developed and yet not be graceful is that one may think he is posing or walking gracefully when he is not, and thus appear more awkward than graceful, from a lack of knowledge necessary to show off the beautiful figure which nature or physical culture has given him.

“As has been stated, it is possible, for reasons we have explained, to be fully developed and not be graceful. But it is not possible to be the perfection of grace without *complete* physical development—every muscle must be brought

out to perfection, and every bone must be well proportioned. It is possible, with an undeveloped figure, to make very graceful movements. But if the person performing the movements be not naturally the perfection of grace in his or her completeness, then it is not possible to show the perfection of grace in the motions, for to accomplish that the person must captivate the senses first. Contrast Fig. 4 with Fig. 3, and you will see what a very awkward and ungainly pose a graceful figure can assume when left to take care of itself.

"These two engravings, Figs. 3 and 4, are faithful drawings of the same man, one showing the same development as the other, the sole difference being in the pose when taught how to stand.

"To be able to assume this graceful carriage of the body (see Fig. 4) in a natural manner, you must first develop and strengthen the muscles on the back of the neck. Put both feet together (or, if you are moving about, you need not pay attention to the feet), draw the hips well back, project the chest forward, draw the shoulders back, hold the head erect, with the eyes looking on a straight line ahead of you, and draw the chin in.

"If you will fasten a couple of small blocks on the side of your room somewhere, you will get along much faster and be more sure not to make a mistake in the pose.

"You are to stand facing the wall, with the toes within two inches of the base-board (if there is no base-board then stand with the toes just three inches from the wall), touch the wall with the chest, just at the pit of the stomach (see Fig. 4) have a block (or some substitute for it) five inches thick put between you and the wall at about the points of the hip bone in front, where you see the line from No. 2 in Fig. 4, and another block between the chin and the wall, four inches thick. If you will do this you cannot go wrong, and you will be surprised at the good results in a short time."

What looks worse than a round-shouldered man or woman, and how often have we been asked by parents how this deformity (for it really is a deformity) can be corrected in their children? Drugs will not do it, but rational physical culture can and will. Let us again turn to Prof. Dowd for information on this subject, and read what he says thereon:

"The causes which bring about this deformity are quite numerous and quite varied. The principal cause is (as in wry neck) from the fact that we are always more apt to bend and reach forward, rather than backward. Each time the arm is extended the shoulder is also projected forward, and the muscles get many times more work to do on the front of the body than those on the back, and they get strengthened accordingly. "The muscles of the back of the shoulders are seldom used, unless you take special exercise for them, or the business in which you are engaged brings them into contraction, which is very doubtful, and so must naturally grow weaker to a much greater degree than those in front. Hence, in consequence of the shoulders warping forward, the chest is invariably flattened, thus in many cases causing pulmonary diseases, and many others, by cramping the vital organs so that they are unable to perform their functions in a natural manner.

"The shoulders not only flatten the chest by being allowed to warp forward, but the flattening of the chest from any other cause will also, in the great majority of cases, cause the shoulders to warp forward.

"Rowing is one of the worst exercises for warping the shoulders; it develops the muscles of the upper back so fully, and at the same time each movement forward flattens the chest and pulls the shoulder-blades upward and forward, causing after a time a displacement of them. This can be avoided if you will do something to develop the chest in proportion to the back. If you have not got some kind of an instrument like the exerciser so that you can practice exercises as given for the Exercises Nos. 1, 3, 5, 7, 9, 13, then this exercise is the next best thing I know of to correct this deformity:

"Stand with the body erect, the feet together, hips drawn back, chest projected, shoulders drawn back, head erect, with the chin drawn back. Then put the hands behind you and interlace the fingers; next warp the shoulders forward a little, and then brace them back as strongly as possible (see Fig. 5) so that the shoulder-blades will come together. Practice this carefully at first, until you have accustomed the parts to the movement, then the oftener you practice the sooner you may expect good results.

"Wearing shoulder-braces does more harm than good; I have never known a single case of round shoulders being improved by wearing them, from the fact that when artificial aid is resorted to, the muscles that were put there to keep the shoulders back in place have been supplanted by the brace and, consequently, the muscles grow weaker the longer the braces are used, and when at last it is taken off the shoulders will be found to be in a worse condition than at the beginning."

Of course, it would be obviously impossible in the course of a short magazine article to fully discuss the subject of rational physical culture. We have thrown out merely a few hints, hoping thereby to whet the appetites of our readers for more knowledge on the subject. We have been induced to publish these few words and to quote so extensively from Prof. D. L. Dowd, because, in the personal experience of this very gentleman, we have one of the strongest possible evidences of what can be accomplished by physical culture and this experience we will, in conclusion, allow the Professor to relate in his own words:

"I think now, while I am in the spirit of it, that I had better relate something of my own experience in developing myself physically, for it will serve to illustrate my system, and may encourage others.

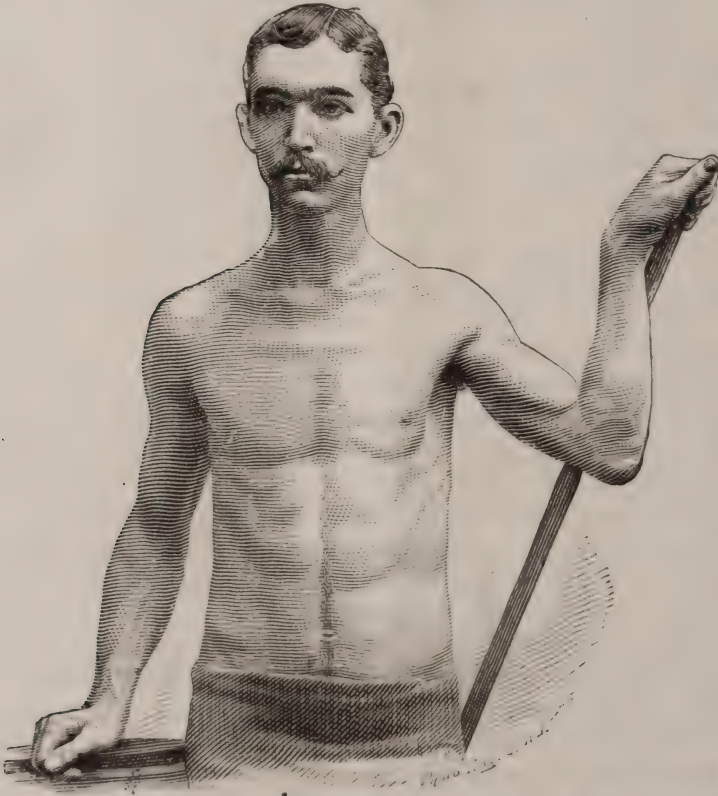
"I began to take special exercise in the Fall of 1877. The first year I worked about in the gymnasium in an indefinite manner, with no instructor to guide me, as there should have been. If I had not taken a deep interest in the subject, I am sure I should have become discouraged by the result of my



Round Shoulders.

first year's experiment. But I was resolute enough to go on, and I commenced the study of the matter in an intelligent manner, and with the most pronounced success. I was 23 years old and weighed 138 pounds after my first year's ineffective work. But when I commenced to exercise in a systematic and scientific manner, I experienced the following results: In just three years I had developed every superficial muscle in my entire body, which increased my weight to 162 pounds—a gain of twenty-five pounds of muscular tissue—and increased my height from five feet eight inches to five feet nine, and my health

FIG. 6.



The Author, 1878.

has been made perfect. I am completely well every hour the whole year through. My muscular power has been trebled in nearly every respect.

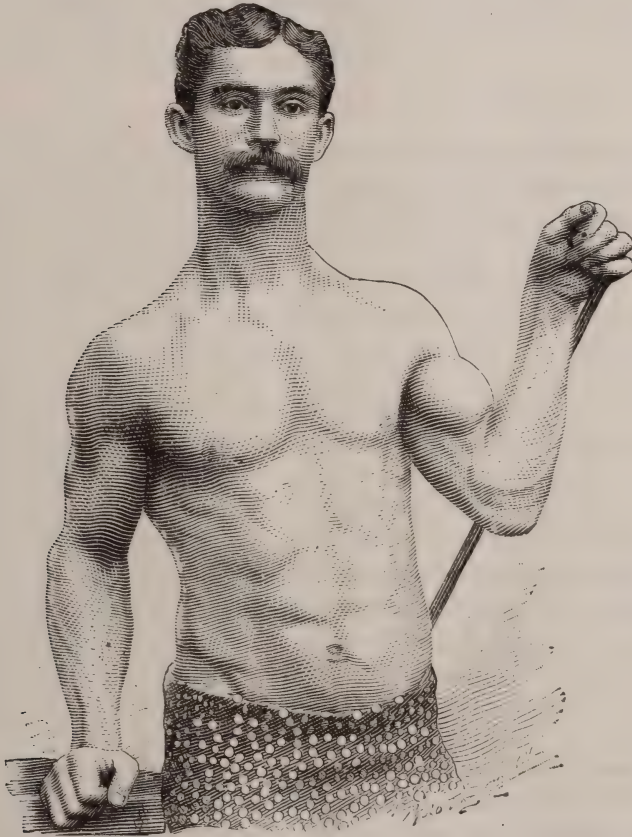
"When I had practiced about a year promiscuously, and made up my mind to continue in a more systematic way, I thought it would be a good plan to have a photograph taken, showing the condition of my muscular system, that I might be able to contrast it with others which I might get taken at a later date, and thus be able to note the difference, if any, between them after a stated time.

"Fig. 6 is from a photograph showing my physical condition before I began

to practice scientific physical culture, and that, too, after a year of indiscriminate work in a gymnasium.

"Fig. 7 is an engraving from a photograph taken about four years later, assuming the same position as in Fig. 6, and being the same focus from the camera, showing the condition of the muscular system at that time and at the present. The contrast between the two cannot fail to show the difference. You will notice in Fig. 7 that every muscle is larger and stronger. The chest in Fig. 6 is not only flat, but sunken; while in Fig. 7 it is full and round. In

FIG. 7.



The Author, 1882.

fact, this is characteristic of the whole figure—one is flat and thin, the other is round and plump.

"These conditions show much stronger in the photos than in these engravings. You will perceive that the face even has been broadened and strengthened, as represented in Fig. 7. It did not take the full difference of time (four years) represented in the dates of the plates. I was but three years in bringing about this change.

"I continued for two years after this period with the same amount of ex-

ercise daily, without making any change whatever in my measurements. I suppose the reason was simply that I had reached my limit in so far as bulk was concerned. But I think my strength still increased a trifle, as I have no doubt it is still doing in some parts of the system, although all the exercise that I take now is in showing pupils how to make the movements, which is enough to keep me in perfect condition. It does not require a great amount of exercise to sustain one in condition when once there."

The Accomplishments of Hygiene.*

BY T. GAILLARD THOMAS, M.D.,

Of New York.

BEFORE proceeding further with our argument, let us agree as to what we will mutually fix upon as the highest and most desirable of earthly rewards. Had this question been put to Buddha, that highly civilized Hindoo would probably have replied, "To be considered a god among men;" Confucius and Mohammed would probably have said, "To be the founder of a religion to which millions would bow;" Cæsar and Charlemagne, "To rule the world;" Washington and Franklin, "To have set up a form of government to be the prototype of the nations for ages to come;" Napoleon I, "To be considered the greatest soldier and statesman that the planet has ever known, even though the attainment of the end should involve wading up to the armpits through blood." You and I, representing as we do the two great moral centers of the universe—New York and Brooklyn—will agree that he who has done the greatest good for his fellow-man has, in the doing of it, won the greatest reward in earth's possession, even though no mortal man know of the deed but him!

As you and I look upon the great picture by Vibert, entitled "The Missionary's Story," we see the crown of glory, the diadem of success, not upon the head of the honored and decorated abbot, but upon that of the ragged servant of the cross, with his body deformed by torture and his frame wrecked by toil.

The forces of civilization work hand in hand for the common good. Since the lifting of the veil which, under the name of the Dark Ages, shut out the benign light of law, of progress, of the fine arts and of religion, how nobly has each of its servitors striven for the re-establishment of all that was good and elevating among men! It was as if all forces had combined to woo back the smile of God upon the earth! Let us see what the medical art has contributed as its quota of work for the good of society.

Where are now those dreadful epidemics of the plague described by Thucydides, Procopius and later by Defoe, which desolated Athens, Florence and London, and, in the reign of Justinian, are said to have lasted for thirty

* Abstract of an address delivered before the Graduating Class of the Long Island College Hospital, March 12, 1891. From the *Med. Record*.

years, and to have destroyed, according to an estimate regarded as reasonable by Gibbon, nearly one hundred million lives? Gone from the notice of the world, and although, even as late as 1835, showing its horrent front in Alexandria, blocked out from civilized Europe, and reduced absolutely to insignificance by our agent, Hygiene.

Where now is the fiend of cholera, represented by painters and by poets as a fell hag, who, with pallid cheeks and lurid eye, marched, torch in hand, into the hearts of the great seaports of the world, sowing death and sorrow broadcast in her path? Almost a thing of the past! Limited, controlled and almost wholly imprisoned in that fateful eastern land of Asia, where the demon of disease seems to fight his last fight for existence.

Where is now that yellow "scourge of God," which, only two decades ago, made its home in the lovely city which looks out upon the delta of the Mississippi; made occasional excursions to Mobile, Pensacola, Savannah and Charleston; at times tramped up the borders of the great river and laid Memphis in sorrow, and, in the beginning of this century, even reached New York and caused its authorities to fence off a portion of the town and call it the infected district? Seized by the throat by our servant, Quarantine, and told in no uncertain terms, "Thus far shalt thou go, and no farther!"

Where is to-day that loathsome destroyer of life and of beauty, smallpox, which a century ago decimated nations, entering households and admitting of no escape, doomed the loveliest to death or disfigurement; and scarce more than a century ago, with unbridled insolence, marching into the halls of Versailles, laid her polluted hands upon the monarch on his throne and dragged him down to ignominious and revolting death? Lashed to heel by our agent, Vaccination, and, like whimpering hound, held securely in leash.

What has become of typhus, jail, ship or spotted fever, which doubled the horrors of the horrible sea voyage, and made room in jails and prisons for others to replace those whom it sent to Potter's Field? Swept out of existence as thoroughly and as surely as are to-day the three great moral blots upon the fair escutcheon of civilization—slavery, dueling and polygamy.

But I must cease my enumeration, though it is difficult for one who loves his calling and glories in its conquests to do so. One more illustration—one which will come closer to the heart of every man among you who loves woman, and surely he who does not is none—and I leave this part of my subject. A few, a very few years ago, the graveyards of all lands, from the most savage to the most civilized, were filled with the bodies of women gone to their last account in the most interesting period of their existence. The very name of puerperal or childbed fever brought the shadow of fear to the face of the bravest man, and through its baleful influence scarcely a hearthside in our land but had a place which stood vacant. To day, thanks to the greatest of medical agencies, Antisepsis, even in the large lying-in hospitals of London, Paris, Berlin, Vienna, St. Petersburg and New York, the disease is almost unknown—where, even as late as ten years ago, fifty were lost, less than one life is lost now!

So wonderful, so startling, so extraordinary are these results that I almost

admit to my mind the fear that the non-medical portion of my hearers may suspect me of boasting as I read the record of the proud achievements of medicine during the last hundred years. I have but to appeal for support to the large medical contingent of my audience, and they will bear out the assertion that my claims are even less exacting than they might with justice have been.

You may contend that the very extent of this enumeration of the conquests of medicine proves that the possibility of achievements in the future must, of necessity, be greatly curtailed. This is far from true. There is an old French adage which declares, "*Plus on s'élève, plus l'horizon s'avance*;" "The higher one climbs, the more extended becomes the scope of vision." One great initial discovery often elevates the students of a science to heights not dreamed of before, from the elevation of which limitless space unfolds itself to view. Think of the secondary discoveries rendered possible by the initial discovery of the microscope, of the telescope, of the Copernican system, of the circulation of the blood, of steam and of electricity.

When the grand fact was recently established that diseases were transmitted from individual to individual by organisms, which have been styled "bacilli;" that by the growth of these organisms diseases were perpetuated upon the earth, and that by their destruction the affections to which they give rise may be prevented, one of the greatest discoveries of any age was made; one of the most sudden elevations of investigators, with resulting expansion of view, was accomplished that the world has ever known. By it you stand to-night upon a plane far more elevated than that which even the youngest of your teachers occupied upon his graduation. Your possibilities in medicine are proportionately greater than his were; be it your function to profit by your good fortune!

It requires no prophet's power to foretell the fact that the science of medicine, which up to the beginning of the seventeenth century stumbled, footsore and weary, along its tedious way, with little enterprise of progress; which in the next hundred years began to show decided evidences of awakening power, and which during the nineteenth century has made great and signal strides along the avenue of improvement, stands at this hour upon the threshold of an era which will belittle all the past, and accomplish in one decade of the future more than a century has previously brought forth. I make no reference now to work actually performed by Pasteur and by Koch. I allude only to the principle which underlies the labors of these great men; to the initial discovery which has rendered their secondary discoveries possible. The so-called discoveries of Pasteur and Koch may in the future rank with the fascinating tales of the "Arabian Nights." It matters not if they do; the great ball of knowledge and of truth has been set in motion, and all the powers of earth, if arrayed against it, could not check it in its irresistible progress.

Gluten as a Food.

BY C. P. PENGRA, M.D.,

Professor of Materia Medica and Botany, Massachusetts College of Pharmacy.

How little we realize the importance of the foods of our day! Count them and we find that we really have but one kind. Man lives on the vegetable kingdom. True enough, we eat, digest and assimilate beef, pork, mutton, eggs and a number more animal *structures*. But are they anything more than modified forms of vegetable life? Could any of them exist without the latter? The word *structures* has been used simply because it expresses the fundamental idea that the animal, man, dependent and living upon the vegetable, is nothing more than a rearrangement of the products of vegetable life. Yes, he modifies them; but he receives, and is glad to accept, and can also live upon, the direct products of the plants.

Therefore, our inventory of our stock of foods brings us to the products of the soil alone, and we find that our actual supply of food is very limited. In fact, the problem of economic and scientific ages has been and is: "Where is the future food to come from?" Already it has been estimated that a natural soil will inevitably become exhausted in 250 years. Need we follow this line of thought further to lead us to the fact that, if the soil supplies all our wants, it probably produces our necessities? If it produces the necessities of our healthy life, does it not likewise provide for our diseased conditions? Admitting this, does it not follow that different products have different purposes, and that in special modifications of the animal system special products of the vegetable are in demand?

Accordingly, it seems reasonable to presume that, for its purpose, the purer the product of the soil the more applicable, useful and direct must be its action. These points have been advanced not only to call attention to the inestimable value of every true food in nature, but also to the idea that as there must be a purpose and place in the animal economy for each and every food, so also must there be demands for the individual constituents of these foods.

The leading physiologists and physicians of to-day are clamoring, not for medicines or new chemical combinations, but for nature, dietetics and proper food. Knowing, as we do, the importance of this subject, we welcome any addition to our bill of fare that brings evidence of its characteristics and value.

For centuries it has been known that man could live happily upon cereals alone, and it required but little thought to suspect that these very cereals—grain or flour—contained something that substituted the flesh diet of others.

In course of time chemistry developed technically what theory and reason had long supposed—that man obtained from cereals more or less of two kinds of food—a non-nitrogenous (also called starchy or carbohydrate) and a nitrogenous (meaty or albuminous).

Later—in fact, only about forty years ago—we were told that one of the greatest constituents of our vegetable food was gluten. Analysis showed that

nature's store of this substance represented from 12 to even 20 per cent. of wheat, 12.6 of oats, 7 of barley, 6 of rice—in fact, that gluten, or some similar nitrogen equivalent, as legumen, vegetable fibrin, etc., is liberally distributed throughout our vegetable diet.

The physiologists promptly applied this discovery, and we were soon made aware that gluten was one of nature's best means of supplying to man the very elements and effects that he sought for and received from the albuminoids or meats.

The writer's observation and experience with the Crystal Springs pure gluten food, "Poluboskos," has certainly conformed to all accepted theories on the subject of nitrogenous foods. He has seen infants, weak and apparently exhausted from lack of food, stimulated and almost revived by its use. Where other foods have been rejected by the stomach, this (although dissolved in the same kind of milk that has previously been rejected) is easily retained.

No word of objection or criticism has come to him, and his experience thus far, and that of other physicians and friends, leads to the belief that in this product we have the nearest approach to a natural food for the waning energies of infants and their many ailments of digestion.

Again, older patients continually report its value and relief in cases of weak stomach, dyspepsia, loss of appetite. Here again theory is sustained; for, regardless of its renovating and tonic effects, it is exceedingly easy of digestion. Observation has shown that this very ease of digestion has been the cause of its retention where other foods have been vomited. Of the many people that we have heard say, "Oh, I can't take milk; I either throw it up or it makes me bilious," I have not known an exception to the report that they are surprised that they can take so much milk with it and feel so well afterward.

Certainly this is good proof of the well-established theory that "the gluten of vegetables is one of the most rapidly digestible of our foods," and makes its use in stomach disorders correspond in reason to the results of experience.

The use of nitrogenous diet for diabetes is so familiar that its desirability does not even require a physician's recommendation. It is well known. The people know it, while the sufferers from this disease very early become accustomed to directing their own diet.

What has this been? Almost anything in the market. Even they have almost invariably applied for "gluten, gluten!" But what have they obtained? Many of them, in their ambitious determination, having failed to procure their necessary food in this country, have resorted to importation for many years. And with what result? The best and purest obtainable contained from twelve to thirty per cent. of starch. Therefore it is not strange that these people and their advisers have been glad, as the writer knows, to find that their own country and kind are capable of supplying their demands with a purer gluten than they had ever before known.

The writer realizes the frankness of these strong claims, but he also knows that he is dealing with a natural food that makes no claim of secrecy, and is as free to the reader in all its claims as is the beefsteak of the market; yet, while

approving its claims, he would go further and say that, besides its usefulness in infant digestion and diabetic disorders, one of its greatest futures will be found in the treatment of nervous diseases.

The theory for this use is very evident. If a food can furnish energy and stimulate force production in the system, how can it do it but by toning up and strengthening the nerves themselves? What, then, must pure gluten be, if it is not one of nature's best nerve tonics?

To prove this, the writer has used Poluboskos in headache and insomnia (due to nervous debility) with results that give evidence that it is a nerve food, and that this nitrogenous, vegetable product has a place in the human economy that is not afforded to anything else within our knowledge.

It is not necessary to enter into a comparison of the various foods of the market, because we know of no other preparation, product or compound, that offers us ninety-one per cent. of nitrogenous food equivalent.

There seems to be every reason to believe that in Poluboskos we are possessed of one of nature's greatest secrets, and that its future place among the desirable foods of the table will be only another practical proof of its necessity in the feeding of diseased vitality.

What May Boards of Health Do to Prevent Typhoid Fever?*

BY H. C. HOUSTON, M.D.,
Health Officer, Urbana, Ohio.

THE almost unlimited power invested in our health boards by the State would seem to render them able to crush out typhoid fever if human agencies can accomplish such a result. In order to be prepared to prevent any given disease it is necessary to possess a knowledge of the causes of that disease. Impaired or lowered vitality renders a person or community more liable to be attacked by contagious or infectious diseases, and it is, therefore, the first great duty of health boards to abolish, so far as lies in their power, everything likely to impair the general health of the community. To the health of the people certain things, we are all agreed, are essential, viz., pure air, pure water, and wholesome food. Whatever, therefore, tends to deteriorate either of these important factors of health should be abolished or corrected. Regarding the cause of typhoid fever, it is assumed that the disease may be propagated in two ways: (1) From a pre-existing case. The bacillus or contagium is present in the discharges, and while not an active poison at the time of their passage, becomes so soon—its activity being increased by warmth and seclusion from air, the typhoid bacillus being reproduced during the course of the fever, and escaping not by the breath, perspiration or urinary secretions, but by the discharges alone. (2) The fever may be produced or generated anew by decom-

* From the *Sanitary Record*.

posing sewage and other forms of animal filth. There are, of course, predisposing causes, such as hunger, cold, watchings, despondency, anxiety, etc. Boards of health may, and should, therefore, see to it:

(1) That the water supply is pure and uncontaminated. Urbana has the Holly system of water—a deep well of pure water, remote from residences and privy vaults, supplies almost the entire population of the city.

Our board, for the past eight or nine years, has carefully observed and studied the history of the few cases of typhoid fever that have occurred in our city, and in that time all the cases, so far as I am aware, have either developed in families whose water supply was obtained from wells, or else the disease had been contracted in other localities and patients brought to friends in Urbana. So impressed have we been by these facts, that as a board we may possibly overrate the importance of a pure water supply in the prevention of typhoid fever.

(2) Pure air. We should see that streets, alleys, water-courses and private premises are clean. Hogs should not be allowed in corporate limits. Our sanitary police, at my request, took a census of the hogs in Urbana, and reported nearly 1,000. These pens, with the utmost care, cannot be kept free from disagreeable odors, and are, to some extent, doubtless, responsible for some of the disease in our midst. Privy vaults should be required to be cemented and frequently cleaned; a system of sewerage maintained where it is possible, and gutters and alleys frequently flushed; briefly, absolute cleanliness required on all private premises and on all public ways. If, notwithstanding all these precautions, typhoid fever makes its appearance, circulars or printed instructions should be furnished physicians, which they in turn should give their patrons, requiring:

(1) Immediate disinfection and burial of discharges where they will not be liable to contaminate water used for drinking or culinary purposes.

(2) Prompt removal of bed-clothes, carpets, etc., which may be soiled by discharges, and their prompt disinfection.

(3) Allowing no food or drink in the room except when in use.

(4) Calling attention to the predisposing causes, and admonishing nurses and friends to take due precaution regarding their health.

(5) Instructing attendants regarding the simplest and most effective means of disinfection.

Having carefully attended to all these matters, boards of health will have done all they can, so far as I am aware, to prevent typhoid fever.

Heredity and Education.*

BY PROF. AMORY H. BRADFORD.

AMONG the great facts which have come to the front during the last half-century, heredity is perhaps the most prominent. It has been recognized in all

* From *The Educational Review*.

ages. It never was more clearly stated than in the Ten Commandments: "For I the Lord thy God am a jealous God, visiting the iniquity of the fathers upon the children, upon the third and upon the fourth generation of them that hate me; and showing mercy unto a thousand generations of them that love me and keep my commandments." This fact, as science interprets it, shows that it is the tendency of disease and evil to run to the third and fourth generations, seldom to the fifth, and that then there is reversal to the original type, which is always beautiful and beneficent. On the other hand, in the nature of things, that which is good continues so until corrupted. Evolution has unquestionably brought the law into its present prominent place; for evolution works by two factors, namely, heredity, or that which tends to permanence; and environment, or that which tends to variation. The characteristic of the first is that it reproduces the past; of the second, that it adapts to new conditions that which has come from the past. The prominence of these forces is, whether justly or not, revolutionizing thinking, compelling men to rewrite their psychologies, their treatises on ethics, their theological creeds. While the revival of interest in this great law influences other spheres of inquiry, it would be strange if it did not also modify theories of education. Every child is the product of all preceding generations. He is not himself alone, but a body packed with potencies derived from no one knows how many or what personalities which have lived before him. The problem of education is by means of environment to modify and, so far as possible, destroy the evil, and bring the good into expression and power. Nor is this all; for tendencies to good, when improperly balanced, become evil. Education, therefore, has to do with the elimination of tendencies toward deterioration and the proper development and balancing of tendencies toward good. The word education is a history. It implies heredity, for it indicates something to be drawn out; and as that something could not originate with the child, it must have been transmitted. The word implies powers which have come from others and which are to be trained. So of the word culture. Where does culture begin? With birth. The age of impression is quite as important as the age of reason. But culture implies something to cultivate. That something is not implanted by teachers, but is always inborn. All schemes of culture should begin with the recognition that each child is different from every other; that the lines of difference run far back, and therefore are not superficial, and that, in order to secure the highest efficiency, systems of education should be adapted to the individuals to be reached. Each child possesses characteristics which run back through generations, for which it is not responsible, and which can be changed only by the most carefully planned and wisely adjusted discipline. In each pupil there appear tendencies which have been modified here and given new impulse there, tendencies which are sometimes quickly discerned and sometimes lie too deep to be easily found. If, now, it be granted that heredity and environment differentiate the pupils in our schools so that no two, even from the same family, are exactly alike, and that they come to the teacher's hands, each with his own peculiar powers and faculties to be developed, the problem of education becomes complicated and

difficult. By the study of what men are, we learn of what they are capable. The word education signifies, "to lead out." To lead out what? That which is in the book? No. That which is in the teacher's mind? No: that which is in the pupil. Dr. Stanley Hall says: "There is one thing in nature, and one alone, fit to inspire all true men and women with more awe and reverence than Kant's starry heavens, and that is the soul and body of the healthy young child. Heredity has freighted it with all the results of parental well and ill-doing, and filled it with reverberations from a past more vast than science can explore; and on its right development depends the entire future of civilization two or three decades hence. Simple as childhood seems, there is nothing harder to know; and responsive as it is to every influence about it, nothing is harder to guide. To develop childhood to virtue, power and due freedom is the supreme end of education, to which everything else must be subordinated as means." Knowledge is not always desirable for its own sake. It is valuable as a means. Study, which leaves the manhood narrow and contracted, and fills the head only as gold fills a miser's purse, is not worth the effort required.

The "Hygienic Cure" of Disease.

BY THE EDITOR.

IN the days that have been, but are now happily numbered, the people demanded drugs, and the physicians prescribed them. If our readers will revert to the days of their childhood, they will recall the formidable array of half-emptied bottles left after an invasion of scarlet fever or measles, testifying, by their very multiplicity and variety, to their real inefficacy. In the past there has been entertained the idea that certain articles, certain drugs really possessed, in themselves, a curative potency. The fact, which we now accept, was then overlooked, the fact that *Nature* alone can cure, that drugs are useful only in so far as they may assist the efforts of Nature. We will hardly go so far as does Dr. Oliver Wendell Holmes, when he says that "it would be better for humanity if all the drugs in the world were cast into the sea, *but God help the poor fish*;" we will not go this far, because we believe, to a certain extent, in drugs. But we do not believe that drugs possess any curative influence *per se*.

We must, if we reflect upon it, come to regard disease as perverted action; we must recognize that when a person is sick, he or she is so because some organ in the body is not properly performing its duty. Such being granted, there must be a cause for this dereliction of duty. Maybe the offending organ has become so altered in its composition that it is no longer able to do its duty; when such is the case, the disease is chronic and, most likely, incurable. Again, there may be no change in the composition of the organ itself, but, for some reason, it may not be working properly; in such cases *drugs* will not restore the integrity of the organ, even though they may be able to assist other means in

doing so. We must understand that there is nothing mysterious about disease. If you note an obstruction in your water-closet you send for a plumber, and, if he be a capable man, he at once recognizes the nature of the trouble and corrects it by *removing the cause*, rather than by resorting to chemicals; if he be not capable, he may use powerful chemical agents, and, in so doing, make matters worse than they were before by eating through or corroding the pipes. Homely as may be the comparison, the case is identically the same with disease in the human being. If, when one is sick, he consults an ignorant or a routine physician, he will be dosed with drugs until, as a result, in nine cases out of ten, he is left in even a worse condition than he was before. If, however, his physician be an intelligent, progressive person, he, first of all, will look for the *cause* of his patient's disordered condition, and, having found it, will provide for its removal, using, for this purpose, the forces of Nature, aided, as he may find it necessary, by the use of drugs.

We would not insult the intelligence of the readers of this journal by supposing it necessary to remind them that there must be a *cause* for every *effect*, but we would ask them to realize that, since disease is an *effect*, it must, logically, be produced by a *cause*, and since the rational way to remove the effect (to cure the disease) is to negative the cause, then the reasonable practice of medicine ought to consist in the removal of the cause.

If a man is wearing a dirty shirt and he buttons up his coat closely, the shirt may be invisible, but it is none the less dirty. If one is afflicted with a curable disease that is attended with great pain, the use of opium may conceal the pain, but the disease is none the less present. It is a fact that, in very many cases, the use of drugs will hide or conceal the manifestations of disease, yet, so long as the cause remains, the disease is not cured: it is but masked.

The idea that we have in mind is that the rational practice of medicine should always seek first to ascertain the cause of any departure from health, and, having found it, *as we always can*, to remove it by using the weapons of Nature, aided, as we have already said, by the intelligent use of drugs. This method of practice is called "The Hygienic Cure," and it is one of the most striking evidences of our growing civilization that the benighted, dogmatic, unreasoning and unreasonable "drug cure" of the past generation is rapidly giving way to this more intelligent and rational system of practice.

How to Cure Consumption.

BY C. R. FARLEY, M.D.,
Of Ridgway, Pa.

APROPOS of the article in the last issue of THE ANNALS on the prevention and cure of consumption by full expansion of the lungs, I will allow one of my patients (a medical man) to corroborate your recommendations therein contained by relating his own personal experience in his own words, as follows:

"In the Fall and winter of 1850 and 1851, after about six years' practice in the country, requiring me to ride night and day without regard to the weather, being exposed to the rains, hails, sleet or snow, warm or cold, and at the age of about twenty-eight years, I was attacked with bronchitis. This cough became so troublesome during the winter and spring of 1851, I could get no rest night or day, and during the summer and Fall of 1851 the cough was so troublesome that I expectorated a very large amount of mucus and slime; also every morning expectorated some blood, usually about a half ounce. During the morning and during the latter part of the night I sweat profusely. My medical friends stated to me that my case was, without doubt, consumption, and that I must close up my matters at once, as I could not live longer than the next spring. All this kind advice I would laugh at and tell them I could not die as I had too much to look after. On the sixteenth day of January, 1852, I was so much broken down that my weight was 117 pounds, and the size of my chest thirty-six inches. On this day, January 16, 1852, I took my family, consisting of my wife and two children, a boy and a girl, twins, aged about a year and six months, and went to my old home where I was raised and where I studied medicine, after placing a small family in my house to look after the house and property. I was there also informed by all my old medical friends, including my preceptor, that my case was consumption without doubt, all of which I laughed at, and treated myself first by the free use of chlorate of potash, chloride of sodium, bi-carb. of soda and ipecac; also I took one tablespoonful of cod liver oil in a glass of ale with each meal. I also took very active exercise in the open air when not stormy, riding on horseback and walking, and always when walking, riding or sitting keeping the chest erect and breathing freely and filling the lungs with the pure air, drawing in the lungs all the air possible and holding the lungs full of air and thus expanding the chest and lungs. This was freely practiced for over a year, and the result was that the cough was entirely relieved; no more expectoration of the slime and mucus or blood. Night sweats were entirely relieved and size of the chest increased from thirty-six to forty-four inches, and the weight increased from 117 to 200 pounds in one year and six months. I then returned to my home, took full charge of my old practice, and have since only continued the practice of filling the lungs with pure air and keeping the chest erect and the shoulders elevated, etc. I am now in my 67th year and perfectly well, never having any cough save slightly from cold for a few days. The enlargement of the lungs and chest, of course, was the result of the freely filling the lungs with air."

I have had a wide experience in cases supposed to be consumption or consumptive constitutions, all of which, under this system of treatment, etc., if thoroughly adhered to, became healthy and had no further symptoms of consumption.

About Local Boards of Health.

BY C. A. LINDSLEY, M.D.,

Secretary, State Board of Health of Connecticut.

THE most prevalent heresy now existing among the health officials of the small towns of Connecticut is a deep-rooted skepticism as to the real need of their official existence. Because from year to year they do nothing, they take the unjust inference that there has been nothing to do, which is equivalent to saying that the towns over which they have sanitary supervision are now, and have been for many years, in such excellent hygienic condition as to be incapable of being improved. That the drainage of these towns and of every house is so good as never to be a source of danger to health. That every citizen gives such careful and intelligent attention to the disposal of his sewage and other household wastes that there is no possibility of unnecessary soil-contamination about his dwelling, or risk of pollution of his own or his neighbors' well. That kitchen slop-puddles and vile cesspools do not exist. That all barn-yards, hen-roosts and pig-styes are kept with such scrupulous care as never to pollute the air by their emanations or be a source of defilement to the neighboring streams. That the food products, and particularly milk, are always supplied to customers in the most wholesome condition. That all dairy farms are conducted on the best methods for securing the health of the cows and avoiding every risk of infection of the milk. That when contagious diseases are brought into the place (for they could not originate in such towns), ample and ready provision is made for taking all the precautions necessary to prevent their spread. There may be such towns, but they are not in Connecticut.

Another fallacy, closely related to the last, is the idea that a local board of health should be a *passive* rather than an *active* organization. That of its own volition it should never take cognizance of any unsanitary conditions. That a town board should occupy the dignified position of a court of appeal, and take no action, whatever may endanger the public health, until the threatened danger is brought to its attention by other parties. Such a conception of the true functions of a health board are not in conformity with the practical sentiments of the times.

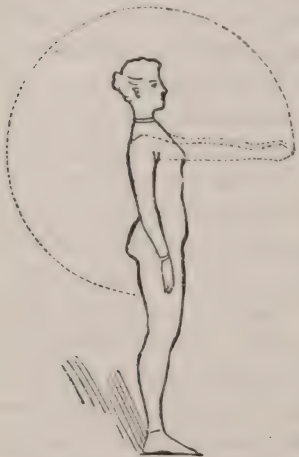
In order to accomplish the purposes of its existence it should be just the reverse of passive. Every member of the board, or at the least its executive officer, should make it a first duty to acquire a familiar personal acquaintance with every part of his town with regard to its sanitary conditions. He should observe and note what influences, if any, affected public health, what parts were most unhealthy, and what may be needed to improve the conditions. Immediately when an intelligent and competent officer begins such observations he always finds enough material to make it interesting.

It is true that in Connecticut the very meager stipends offered for such services (often next to nothing, and still oftener really nothing) are not great incentives to active exertion; but that is no reason why an aggressive administration of public hygiene is not needed, or why it should not be paid for as well as other useful public services.

Exercising for Beauty.

SCHOOLS of physical culture and gymnasia multiply in our cities, but the necessarily somewhat expensive tuition, the cost of the required costume, etc., exclude many, while yet others of the young women in the land have not the advantage of living within reach of a gymnasium and professional training.

But the perfectly laudable desire to be beautiful is not bounded by city walls or even purse strings.



"Stretch the Arms Out in Front."
No. 1.

Any large gathering of women displays a distressing prevalence of unlovely features which are neither the result of inheritance nor fate, but of bad habits, and which may be eliminated by pains-taking, practice and perseverance. There are the rounding shoulders which, if persisted in, curve one's back by middle age from the top of her corsets to her neck, until it looks misshapen. The prominent shoulder blades, low bust, narrow chest, prominent abdomen, flabby double chin, shuffling and scuffling that replace a graceful style of walking—we all know these demerits, they are shockingly common among women who aspire, as the majority of women do, to look well fashioned by nature, well bred and well clothed. Look at the pose assumed by nine people out of ten who fancy themselves unnoticed; is it not ugly? If standing, it is upon one foot, with shoulders and hips out of line, or else "flat-footed," with back flattened, hips forward, shoulders stooping, chin thrust forward and upward.

The science of physical culture cannot, it is perhaps not necessary to say, be taught in a newspaper article, or learned and applied by anything short of hard and long-continued study; but the most unscientific mind can learn to stand and walk gracefully, to develop her angular figure into curves or learn to carry her unwieldy proportions so that they are not conspicuously in evidence.

The first step toward improving one's figure is to stand correctly, with the weight on the balls of the feet, poised so that one can rise on her toes without bending backward or forward to keep her balance.

Do not jerk your elbows back, do not lean backward from the waist; but, standing as directed, raise the chest, draw in the chin, and hold the head so you can walk with a book laid upon it without its falling off.

This position puts the shoulders where they belong, curves the back naturally at the waist line, flattens the abdomen into its rightful place, and raises the bust.

This attitude, so easily assumed, is at the basis of a good figure and an



"Bend so the Hands touch the Floor." No. 2.

elegant carriage; without first holding the body and head well, one cannot stand or sit or walk with grace, or with any amount of lacing or padding be anything but ungraceful.

The exercises that are given below for strengthening the various muscles should be practiced daily, if but for a few moments night and morning, always in a state of undress or in a perfectly loose robe, and in addition one should learn as rapidly as possible to keep the correct position.

In sitting it is neither graceful nor desirable to do so in bolt upright fashion, but remember to hold the chest up and to bend, whether forward, backward or sidewise, from the hips and not from the waist lines.

Compression at the latter point, such as bending at the waist line produces, at once rounds the shoulders, protrudes the shoulder blades, brings the hips forward, lets the breast drop. Practicing standing, sitting and walking just from one's bath before a mirror will show at once the value of a correct poise of the figure.

So long as the present pretty fashion of low-necked gowns for all dress occasions prevails, a shapely throat will be at a premium. But a shapely throat is rare.

For filling up the hollows above the collar-bone this simple exercise, regularly observed, is recommended: Fill the lungs with air, and as the diaphragm forces the air out again, hold it a few seconds in the throat.

The angle in thin throats formed by the line from the point of the chin to the neck may be charmed into a curve by raising and sinking the larynx, a movement that is accompanied by a forcible action of the tongue.

This can be practiced by standing sidewise before a mirror with a hand-glass. Each time the larynx moves downward the throat puffs out, and practice will retain the curve thus formed.

Another exercise for the development of a pretty throat is to close the jaws, part the lips, and draw the corners of them backward and downward, slightly but forcibly, holding them for a few seconds, and then relaxing the muscles. The movement develops the broad muscle which is attached to the chin and lower jaw and reaches below the collar-bone.

For the unsightly double chin the same exercises are used to strengthen the muscles in connection with massage to induce firmness of the skin. In washing and drying the face, the skin should always be pushed up from the throat, not drawn toward it.

Other excellent exercise for the throat is to drop the head alternately forward, backward and upon each shoulder, as low as possible, keeping the chest elevated without elevating the shoulders. Next, with the eyes closed, roll the head slowly, starting with it drooped forward upon the chest to the right, and so on round. Roll slowly, not with a jerking motion, and the strain upon the muscles should be felt, since it is for their development that the exercises are taken.

To develop the large muscles of the chest, all padding should be removed, for it overheats and presses upon the muscle, diverting the blood from it and preventing development.

The exercises for these muscles of the chest are to stretch the arms out in front (cut No. 1), place palms together, swing the arms back, and touch the backs of the hands behind the body, keeping the arms as high as possible. Repeat several times. Then swing the arms back and round to a front position, then extend the arms in front, palms downward; turn palms upward, clinch the hands, and return to side of body, keeping the elbows unbent. Repeat this exercise, carrying the arms above the head.

An excellent exercise for freeing and strengthening the muscles of the back and the back leg muscles is shown in the stooping figure (cut No. 2), bent so that the hands touch the floor.

Standing well poised, lift the arms straight above the head, turn the body slightly to the right, and bend slowly from the hips, keeping the knees unbent, until the hands touch the floor, one or either side of the right foot.

As the hands begin to fall and the body to bend, droop the head and carry it down.

Raise the body slowly and lifelessly, letting the arms swing as they will, raising the head last. Repeat several times, first to the right and then to the left. One who has never done this will not find it possible at first to get her hands to the floor and not bend her knees, but practice will do it. Do not bend the knees; let the body bend merely at the hips and below the floating ribs.

For the benefit of the back and the stomach, liver and other vital organs, the exercise known as the torso circle (cut No. 3) is taught. Standing properly, and with the lower part of the body perfectly straight, swing the upper part of the body round in a circle, using a point at the waist line in front as a pivot. Roll



"Swing the Upper Part of the Body Round." Cut No. 3.

the head with the body, arms akimbo, thumbs forward, and let the motion be steady, not jerky.

There are many, many other movements for the development of the various portions of the body, but these given above will do much to give a well-poised body and head, a graceful carriage, and a supple figure.

The Sanitarian at the Breakfast Table.*

Do you then really believe that if the laws of hygiene were rigidly observed there would be no disease to afflict humanity? Thus spoke the skeptic, after I had been arguing for a long time the benefits that mankind would derive from a practice of the teachings of hygiene. Do you think, I replied, asking a counter-question by way of answer—do you think that if the whole world went

* Some four years ago this article was first published in THE ANNALS. It was intended as the first of a series of articles, the continuation of which was unavoidably interrupted. It is now republished that the series which follow may be made intelligible. This series will be continued from month to month in THE ANNALS.

to church there would be no sin? The teachings of religion are antagonistic to sin, yet sin to-day is even more prevalent than disease; but as religion gains a hold on a community, the greater crimes, the more grievous sins become less common; and so also as hygiene becomes known and respected, the great plagues, the terrible devastations, the physical scourges of humanity disappear. If you want me simply to answer your question in the abstract, without the qualifying statements that are always necessary in formulating an answer to a question of broad dimensions, then I would say yes. Yes, yes, indeed; if all the teachings of hygiene were rigidly observed, disease would be unheard of; even our largest dictionaries would ultimately discard the word, because there never would be any occasion to use it. This, I would say, as I have said, must be a broad answer to a broad question. Now I know that you will ask me whether I honestly believe that such a millennium will ever be attained, and I anticipate your question by answering, most emphatically, no. Just as religion aims at the moral perfection of the individual, so does hygiene aim at his physical perfection, and we have no more reason to hope or expect that the one will become a reality than that we will be blessed by the beatific spectacle of the other. No, indeed, my dear Skeptic, disease will never be driven from this planet; it will always walk hand-in-hand with our dearest hopes and pleasures; it will be ever ready to darken the joy that the little toddling feet and prattling voice has brought to our fireside; when after you have enjoyed the imaginary pleasures of masculine liberty, until a small bald spot commences to appear on your cranium, and you discover some fine morning that your hair is not quite so black as it used to be, and that an almost imperceptible little wrinkle is forming at the outer corner of your eye; when then, my friend, Mr. Oldbeaux, you have concluded that, after all, the world to a lonely man is but a hollow, empty affair, and you take unto yourself a partner, so charming, so delicately sympathetic with your somewhat set and not always reasonable ways, so ready to enter joyfully into all your sunshiny pleasures, and so pathetically consoling in your periods of cloudy and gloomy despondency, when you are forced to wonder how you could have been so long such a confounded old fool as to imagine that bachelorhood was a divine institution; when you fondly imagine that you have at last really begun to taste the rapturous joyousness of an approach to a future life of perfection; then when you feel that life is truly bliss and that your fondest dreamings could never have pictured a more perfect state; then, I say, just as surely as in bygone times, when the black plague and smallpox swept over an unprotected community; then, I say, just as surely will iconoclastic disease steal in at your closed door and remorselessly rob you of the central figure of this domestic utopia, throwing you helplessly, and I might say hopelessly, back into that chasm of lonely nothingness from which you have but so recently emerged a truly, thoroughly happy man.

Yes, I mean *iconoclastic*, because in reality you have brought this affliction on yourself; not, strictly speaking, as an individual, because you have of course been as careful to avoid the causes of disease as any one could be; old bachelors are always particular about their health; every one must nurse something; it is

an inclination implanted in our very natures. The young mother nurses her baby, the merchant nurses his business, the author his books, the husband his wife, and the epicure his gout; but the bachelor (particularly if he be well provided with the root of all evil) can have none of these (save the gout as he advances in years), and as he must necessarily nurse something from the instinct born in him, he falls to and nurses his health. Who ever saw a single man of more than 30 years of age, who was not (possibly unconsciously to himself), but for all that, who was not a sanitarian, so far as he himself was concerned? He cannot be hurried at his meals; he must have his full quota of sleep; his room must be large and well ventilated; his morning visit to the water-closet is religiously paid; comfort rather than fashion will dictate the shape and size of his shoes; in a word, in a thousand and one small ways (oftentimes unrecognized by himself) he plainly shows that the time has come when he thoroughly realizes the truth of the old saying, that at thirty a man is either his own physician or a fool. Having only himself to consult, he has made a thorough study of himself, and he knows his lesson well. Therefore, I say *iconoclastic* disease—excuse me; Mary, you will never make that fire burn more brightly unless you go about it in a more rational way. I have been watching you ever since I came down-stairs, and I can no longer hold my tongue. You shovel on the coal, put up the blower, the fire burns up a little, off comes the blower, and down goes the fire. You remind me of the man (or I might say men, and women too) who eat, and eat, and eat; never think whether their bowels are moved or not, and when they feel badly, when their vital spark is low, take a *nip* of whisky to spur them on; they derive temporary benefit, just as your fire does from the blower, but their vital force is getting weaker and weaker, just as your fire gets lower and lower, and both will finally fade away. The man cannot be well unless he systematically removes his ashes, and your fire cannot burn well unless you regularly rake it. But, bless me, it is nine o'clock, and I have some very sick patients to see. To-morrow morning, I will come down early, Mary, and show you how to make a good fire; for a stove and a human being are made very much on the same plan (if you will excuse the vulgar comparison), and the life of a man and the life of a stove have several of the same ends in common, and must be managed in very much the same way in order that the desired ends may be accomplished.

[*To be continued.*]

Blind Faith in Drugs.

A young man, all broken down through a course of dissipation, recently called upon a noted physician of Paris for advice. The doctor, having ascertained what the patient's habits had been, laid down a set of hygienic rules to be followed, assuring his patient that if he did so he would soon be entirely cured. The young fellow looked at the *savant* in disgust for a moment and then said, "Any fool would know he'd get well if he did that, but I don't want to do that; I want to do just as I have been doing and have some medicine to cure me."

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EDITORIAL.

Hygiene for Employes.

IF, as we claimed in our last issue, it is to the material interest of the employer that his employes should be familiar with hygiene, so is it equally to the worldly interest of the employe himself that he should be so equipped.

We might divide employes into two classes: those who are simply machines and those who are machines and something else, the *something else* being the laudable ambition to rise in the world. The "mere machine" employe may do his work indifferently well day by day, even though he knows nothing of hygiene, his life actions being guided solely by instinct, as it were. He will do what he is directed to do and nothing more. Such a man is "merely a machine," in the truest sense of the word, and we can make nothing more of him. Then we have the employe who is "something more than a machine," who has the ambition to always do more and better work than is required of him, and it is this class of *employe* who finally becomes the *employer*. The railroad presidents of to-day are the *brakemen*, who, twenty years ago, were machines and *something more*. The great manufacturers of to-day are the men who, a generation ago, were mechanics and *something else*. The employers, the *bosses*, the capitalists, the magnates of to-day are men who have been *healthy* machines; many of them healthy in spite of a disregard of hygiene, so to speak, yet in reality because of their instinctive observance of her teachings. They have been, by no volition of their own, unconsciously, so to speak, *natural* men, and the *natural* man is the typical sanitarian. Hygiene and Nature are synonymous terms, and he who understands the laws of Nature is familiar with the precepts of hygiene. We may be met with the objection that many of these successful, self-made men have not paid any attention to hygiene, and, to a certain extent, we will grant this position. But where such has been the case, we will find these persons exceptionally endowed with physical vigor. Take, for instance, Mr. McLeod, the distinguished president of the Reading Railroad; he is a man of such great vigor that he would enjoy the advantages that health could confer even though he might be regardless of the care of his health. But such cases are exceptional, and they cannot be accepted as the rule.

We can, however, accept it as an axiom that good health is a necessity for worldly success, whether such health be accidental, so to speak, or the direct result of design and method. The healthy man will always possess an advan-

tage over the unhealthy one, and just to that degree to which he cares for his physical welfare will be his chances for worldly advancement. If such be the case (and we are quite confident that a little reflection will convince anyone that it is), is it not self-evident that the man or woman who would be something more than a machine, who would rise in the world, must have a regard for health? We do not mean that they should be morbidly sensitive on the subject, far from it (hygiene would denounce such a practice); but we mean that they should be eager to learn the laws of Nature, and, having learned, to observe them. Thus, then, we feel that we may safely assume that if one would aspire to elevate his or her position in the world, they must, first of all, become familiar with hygiene. The mechanic or the day laborer, who would wish to truly live, must be a sanitarian. If it is to the interest of the employer that his employes should be familiar with hygiene, so is it, we maintain, even more to the self-interest of the would-be *self-made* man or woman that they should become familiar with the doctrines of hygiene.

The Ideal Physician of To-Day.

SOME few years ago, in the days when the *people* were but little interested in hygiene, we published an editorial in this journal with the title of "The Ideal Physician of the Future," hoping, yet fearing to hope, that our utopian conception might become a reality. The idea which we then outlined was something like this:

In the first place we argued that the relation of the physician to the public was, when we paused to reflect thereon, the most unnatural, the most anomalous, the most unreasonable and the most unfortunate of all the relations that existed between any two other classes of humanity. Argue as we might, disguise the truth as we would, the fact yet remained that it was to the *material interest of the physician for the people to get sick*. Just as cold weather, by causing water-pipes to burst, would make business for the plumber, so this same cold, by producing rheumatism and neuralgia and pneumonia, would bring money to the doctor.

To their eternal and unique credit, be it said, the physicians have always been foremost in promoting and disseminating a knowledge of hygiene; yet it is undeniably the fact that an epidemic of smallpox or of typhoid or "*La Grippe*" always meant an increased revenue to the doctor. The misery of the people would pay the butcher and the grocer and the tailor for the doctor. Say what we might, there could be no question that the more sickness that existed the greater would be the revenue of the doctor; and, since it costs money for a doctor to live, as well as for anyone else, we cannot gainsay our first proposition that it was to the material interest of the physician for the people to be sick, even though the physician himself was noble and unselfish enough to endeavor to prevent disease.

This was the relation of the physician to the people at the time that we penned this former editorial, and while this same relation holds good to a cer-

tain extent to-day, we are delighted to note that there is a tendency—and a strong one—towards that ideal relation which we outlined in our former article.

Our idea then was, and now even more strongly is, that the physician should be not only the family *healer*, but the family *counselor*. That, instead of being called in after disease had invaded the household, he should be employed to keep it out. Our practical idea was that the people should employ and pay a physician to “*keep them well*,” rather than to *try to cure them when, maybe*, it was too late. Our idea was that one should select his physician and pay him in advance so much per year, this payment entitling him to the privilege of consulting the physician whenever he might so wish to do, as well as to the services of the physician, should such, unfortunately, become necessary. Under the old system, by which a fee was paid for each visit, the consultation that, most probably, would have warded off an attack of sickness was postponed until too late to be effective, and an expensive illness was the result. Under our new idea, the payment having been made, and the person feeling, therefore, at liberty to do so, will consult the physician on any and every occasion.

The result of this relation would be to make it to the *material interest of the physician to keep his clients well*.

Utopian as this idea seemed a few years since, it is now becoming a reality.

The hygienic prevention and the “hygienic cure” of disease are now rapidly becoming fashionable, and that which is fashionable is always popular.

Next summer an International Congress of Hygiene will be held in London, and this congress will be presided over by the Prince of Wales. This one fact will have an immense influence in making hygiene the fad, the fashion, as it were, in England; and since we derive so many of our fashions from England, we may confidently look for a great impetus to be given to the popularity of hygiene in this country by this official approval of the future king of England, himself an ardent believer in the efficacy of the hygienic cure of disease.

Our fond dream of a few years since is a reality. In every large city to-day there are intelligent and reputable physicians who are resorting to the “hygienic cure” of disease, to the gradual abandonment of nauseous and dangerous drugs. Of course, drugs are used, but not, as formerly, with the idea that they are doing the curing, but simply as adjuvants to the “hygienic cure.”

The leading and more intelligent and more thoughtful persons are resorting to this “hygienic cure,” and we feel confident that the coming congress, to which we have referred, will have such a great influence that, within the course of another year, the “hygienic cure” of disease will be the fashionable method of cure among the more intelligent classes.

NOTES AND COMMENTS.

Simple Method of Removing Foreign Substances from the Nose.

Dr. T. J. Slaton, in the *Southern Medical Record*, says that he has used the following method for the last ten years, and can recommend it as very effectual: Place a thin cloth over the child's mouth and apply the finger to the nostril not containing the substance, pressing sufficiently to close the opening, then put the mouth to the child's and give two or three strong puffs. The substance will fly out in nine cases out of ten. Should the substance not come completely out it can easily be reached with the forceps.

The Ventilation of Tunnels.

Among the mass of useless, unnecessary and frequently injurious proposed legislation that is periodically brought before our legislatures, we occasionally find some gem so pre-eminently valuable as to meet special comment. Such a jewel has been recently presented to the Legislature of New York in the shape of a bill providing that all tunnels used by steam railroads shall be so ventilated as to keep them clear of smoke, steam and other atmospheric impurities, and shall be lighted by electric or other lights. The bill prescribes severe penalties for violation. Such a measure is directly in the interest of public health, can injure no one, and is thoroughly worthy of universal support.

Stop to Think about the Baby.

How long would the stoutest man hold out against disease if he were confined in one or two close rooms, stove-warmed or furnace-heated, for an entire winter, without an excuse for ventilation, or whiff of fresh outdoor air—if he were a stranger, born and bred, to the taste of pure water, or of any water, in fact, pure or impure—if he were compelled to be perpetually "hungry" in order to get anything to drink—if he reveled in ten or twelve square meals a day and lunched at pleasure, from the breast or bottle, through the live-long night; if his food were placed "in the kitchen sink or in the damp cellar to keep cool," prepared in bottles lined with the milk of yesterday and drawn through rubber tubes specially fitted for the culture of the tyrotoxicon of Vaughan and all the other new-fangled poisons of present-day science?

This is no parody on the lives of thousands of children, not only in families in the humbler walks of life, but among the educated classes. Yet to a child without a prejudiced or tarnished heredity, who enjoys pure air, pure water and pure food, suitably prepared and eaten at reasonable intervals, cholera infantum has no fatality, teething has no terrors, diarrhœa is as innocent as it is to an adult, and marasmus is a myth.

Bottle-Fed Babies.

"I'll just tell you what it is," remarked a fat, jolly old soul to her companion as the street car rumbled along, "the doctors kin say what they please, but I know it's just flyin' in the face o' natur' to bring a baby up on a bottle. You know Sally Ann Jimson, what lived next door to us?" "Yes," assented the other. "Well, she tried to bring her baby up on milkman's milk, and it died of water on the brain."

Physical Training for Women.

In a late number of the *Medical News*, Dr. J. H. Kellog, of Battle Creek, Mich., has a paper in which he gives strong testimony to the efficacy of physical training as a preventive of, and as a method of curing the ill-health and the diseases of women. He says: "The great advantage of exercise in this class of cases is best appreciated by the study of individual cases. For example: I have frequently seen the aggregate strength of arms, legs, trunk, and respiratory organs increased by three months of exercise more than 200 per cent., and I have many cases on record showing an increase of more than 400 per cent. In one instance the rate of increase was nearly 700 per cent."

The Food of the Laborer.

The "frying-pan" has been very truly and very aptly described as "the invention of the devil;" yet, is there a laboring man who is ever treated to the luxury of a broiled steak? A dyspeptic mechanic is a handicapped man; yet it will be almost an impossibility for him to be anything else but a dyspeptic if his wife feeds him with food cooked in a frying pan. Do not forget that digestion is a chemical process, and bear always in mind that chemical reactions cannot properly take place if the articles to be acted upon be not in proper condition. Fried food is not in proper condition to be digested, and a man who is fed thereon will not only become, ultimately, a dyspeptic, but he will not be able (because of poor nourishment) to properly perform the duties of his position.

Conveniences for Employes.

Mr. Conyers Button, the large manufacturer of Germantown, is certainly a man of infinite wisdom. He is one of those progressive employers who thoroughly realizes the importance of the suggestions which we made in the editorial in our last issue. He truly believes that a healthy employe will be a valuable employe, and he sagaciously argues that if, in his mill, he sets before his people the example of cleanliness and neatness, they will not be satisfied with less in their homes. Hence do we find in his factory comfortable closets, kept clean at all times, and the opportunity freely offered to his people to care for their bowels. We do not see old newspapers about (a great cause of piles), but nice toilet paper is bought in quantity and freely supplied for use. Mr. Button is setting the example that it would be well for all manufacturers to follow.

No Royal Road to Health.

There is no royal road that leads to health nor can great works be accomplished without a struggle (says Dr. G. P. Conn). It has been decreed that only by labor can one secure advancement either mentally, physically or professionally. It is equally certain that health is an entity that you cannot buy. The throbbings of a fevered brain will not be palliated by an embroidered pillow, a purple canopy or the most costly laces. Neither international and state lines nor municipal boundaries have any terrors for an epidemic of smallpox, yellow fever, cholera or other pestilence, whose subtle influence may be felt in midnight darkness, yet cannot be seen by the light of the noonday sun.

Why Drugs Are Popular.

It is a fact that for every death from acute disease, there are about ten cases of sickness terminating in recovery, while the majority of cases of mere functional disorders tend to right themselves. Such being the case, it is evident that the public, unfamiliar with these facts, will be ready to attribute the recovery, that would have taken place without them, to the drugs that have been used. The most freely used and extensively advertised drugs are the ones that earn the greatest reputation for curative virtues, because being used in the larger number of those disorders that would have recovered under any circumstances, the result is erroneously and thoughtlessly attributed to the drug in use. Only ten per cent. of acute disease tending to death, while ninety per cent. tend toward recovery, it is no wonder that the public is ready to accord to drugs the power to cure these ninety per cent., though, in truth, the result would be as it is without the use of a single particle of any drug.

Diet and Voice.

Mrs. Crawford, in *London Truth*, discusses the philosophy of eating. "I once knew," says she, "an impresario, who was also a Jew. He was behind any number of lyrical theaters, from Stockholm to Sydney, cafés-concerts, music halls and other places where singing was the attraction. He held carnivorous feeding in horror, and told me that he never lost his time seeking for fine voices in countries where a fish or meat diet prevailed. The most fish-eating Italians—those of Naples and Genoa—have not often among them sweet singers. The most meat-eating part of Great Britain—England—is also a voiceless country. Though the singing is so fearful in the Scotch kirks, my friend found some divine songsters south of the Grampians, and a greater number in the Highlands. He often heard common Irish women 'lilt' and sing like nightingales, but never in the towns. Sweden was a country of song, because a country of grain. Norway was not. Too much fish was eaten there. Vocal capacity disappeared in musical families who got rich. They ate too much meat. The vocal birds are eaters of grain, fruit and vegetables. No carnivorous one could ever sing a song. It croaks, has a bad liver, and is generally melancholy."

Shaving with Vaseline.

From a St. Louis *Interview* we quote the following: "A friend of mine a few months ago told me how to shave easily and painlessly, and I have never shaved in a barber's shop since. The plan is to use oil or grease in place of soap to prepare the chin and soften the beard. Vaseline is the most convenient, and it should be rubbed in quite freely. Then with a keen razor shaving can be done quickly and without the suspicion of pain. At first I couldn't reconcile myself to doing without the orthodox lather, and used soap after the vaseline had been applied. But the soap is really unnecessary, and shaving with oil or vaseline is cleaner as well as pleasanter, and what is more to the point, there is no irritation whatever to the skin."

Washing Diapers.

We have been frequently consulted by mothers about a raw and excoriated condition of the hips, inside of the thighs and seat of the baby. No good cause could be assigned. Diarrhoea will cause this soreness in some cases, because of the irritating nature of the passages, so also will want of cleanliness, as allowing soiled diapers to remain too long in contact with the parts. But in the cases under consideration none of the ordinary causes were present, and we were at a loss to account for the trouble until we turned our attention to the washing of the diapers, and here we at once found the cause. We learned that some of these *easy-washing* soaps, which are now being so extensively advertised, were used with which to wash the diapers. These soaps are usually strongly alkaline, and by saturating the diaper with a strong alkali they made of it a veritable blister. The substitution of *pure castile soap* was followed by an immediate amelioration of the irritation of the skin, and, this source of fretfulness being removed, there was much less crying, whining or uneasiness on the part of the baby.

Why the Stomach Does not Digest Itself.

From a new study of this subject Dr. E. Sehrwald announces the following conclusions: (1) The balance between the alkali of the blood and the acid of the gastric juice does not follow, during life, the law of diffusion, but moves in narrower limits. (2) The self-digestion of the stomach is partly prevented by the alkalinity of the blood, and partly by cell-action. (3) The living epithelium interposed between the blood and the gastric juice prevents their mutual neutralization and preserves the alkalinity of the blood and the acidity of the gastric juice. (4) By this protection the stomach is spared a great deal of work of secretion and absorption. (5) The protection furnished by the flowing blood is partly due to its alkalinity and partly to its properties as a nutritive liquid. (6) All influences which arrest the nutrition of the cells of the walls of the stomach, may lead to self-digestion and ulceration. The conditions which may be mentioned in this connection are, first, disturbances in the circulation; second, direct injury to the epithelium; and third, injuries of the trophic nerves.—*Münchener Medizinische Wochenschrift*.

Medical Properties of Vegetables.

Spinach has a direct effect upon the kidneys.

The common dandelion, used as greens, is excellent for the same trouble.

Asparagus purges the blood. Celery acts admirably upon the nervous system, and is a cure for rheumatism and neuralgia.

Tomatoes act upon the liver.

Beets and turnips are excellent appetizers.

Lettuce and cucumbers are cooling in their effects upon the system.

Onions, garlic, leeks, olives and shalots, all of which are similar, possess medicinal virtues of a marked character, stimulating the circulatory system and the consequent increase of the saliva and the gastric juice promoting digestion.

Red onions are an excellent diuretic, and the white ones are recommended to be eaten raw, as a remedy for insomnia. They are a tonic and nutritious.

A soup made from onions is regarded by the French as an excellent restorative in debility of the digestive organs.—*Scientific American*.

Schools and the Spread of Disease.

It is in the power of each member of the general public to assist in some way or other the efforts of the sanitary officers to promote good sanitation and prevent the spread of infectious disorders, and in every rightly ordered community such co-operation and mutual confidence are encouraged and fostered with beneficial results. Especially it is in the power of those engaged in education thus to co-operate in sanitary work. Take the records of epidemics of measles as an example. Health authorities can do little to combat this disease. The infection exists and is spreading abroad before the disease declares itself by the appearance of a rash. "It is by school managers and others interested in education," remarks Dr. Barwise, in his last report on the health of Blackburn, "insisting on children with indications of feverishness, suffusion of the face, watering of the eyes and other premonitory signs of measles, remaining at home for two or three days until these symptoms have passed away, or the disease has become apparent, that we must look for a reduction in the death rate from measles. No child coming from an infected house should be allowed to return to school for four weeks. While I am speaking of the influence of schools on the propagation of infectious diseases, I might say that I believe that with a little practice, a clinical thermometer in the hands of the superintendent of each school would frequently lead to the discovery of contagious disease, which might otherwise remain undetected until a number had become infected. Again, each morning might be started by a show of hands, and a brief examination of each pupil, more care being taken with those who had recently been absent from school. Any child whose hands were peeling or shedding scales should be sent home as being still in a position to spread infection. School teachers could very easily obtain a knowledge of the early symptoms of fevers, and such knowledge would prove a protection to themselves and an advantage to their schools."—*The Sanitary Record*, London.

Sausage, Scrapple, Meat-Pudding, Etc.

It is related in the papers that a man, on his death-bed, recently confessed that, when working in one of the large *hash factories* of the West, some years ago, he killed a fellow-workman and disposed of his body by putting it into the mincing machine, where it was *hashed* up along with the pigs. The story sounds very *fishy*, and we doubt its accuracy, but it serves to bring vividly to our notice the readiness with which dogs and cats and mice and rats and every and anything might be converted into sausage and the like. We have nothing to say against pure, clean, well-made sausage or scrapple or meat-pudding. The people like them, and we see no reason why this liking should not be indulged. But we should know all about the origin and manufacture of such diet, and should not use that which comes from, we know not where. Clean, healthy sausage, made by an honest, conscientious, cleanly farmer, will hurt no one, but *factory-made* sausage should be tabooed as we would the veriest of poisons.

Laughing by Telegraph.

Telegraph operators lead a highly monotonous life, and are entitled to all the diversion they can extract from the unemotional machine over which they preside. A laugh transmitted over the wires cannot be of a very infectious nature, but it can be accomplished, nevertheless. When an operator becomes lonely, says the Indianapolis *News*, and his sounders are clicking out messages not intended for him, he calls up some friend and opens a conversation. This, of course, cannot be continued long before something "funny" is said. It then becomes the duty of the operator to laugh, which he does by making four dots, then one dot and a dash, thus: —, spelling ha. Thus, to all jokes he replies h-a, h-a. From the same authority we learn that surprise or incredulity, as well as amusement, can be conveyed by a few clicks; thus four dots followed by two dashes make the expression "hm," the precise meaning of which, in any given instance, is to be judged, no doubt, by the context.

Cleanliness Precedes Godliness.

We are forever preaching the gospel of cleanliness, than which nothing has a more wholesome influence upon the moral as well as upon the physical man; we are always striving to encourage cleanliness both within and without the body; hence, while we cannot fully indorse such vigorous sanitation, yet we can have some sympathy with the residents of a rural community up in this State, who, failing to convince one of their neighbors of the necessity for personal cleanliness (in which he was sadly lacking) recently, took him by force out of his room, carried him to the stable of the hotel, stripped him, threw his clothes away, and gave him the most vigorous bath he ever had.

They scrubbed him with horse brushes until the blood started in many places, and then poured water over him by the bucketful. As we say, this is a rather vigorous method of enforcing the "gospel of cleanliness," but we doubt not that its influence will be salutary and that personal cleanliness will be less of a *lost art* in this particular community in the future.

Relationship of the Diseases of Animals to Those of Man.

The *Medical Press*, January 28, 1891, says: The discussions which have recently taken place as to the causation and prevention of tuberculosis have invested with a peculiar interest the question of the relations of the diseases of the lower animals to those of man. The subject is one to which attention has not been long directed, but even at this early stage it bids fair to add considerably to our knowledge in respect to the prevention of certain transmissible diseases. The matter, as a whole, has been assigned a special section in the Congress of Hygiene, which is to take place in London in August next, and the section will take into consideration, *inter alia*, the infectious, contagious, parasitic and other diseases communicable from animals to man, and *vice versa*; the methods of the propagation of diseases affecting mankind by means of animals and animal products; the infection of meat, milk and other comestibles; and the restrictions to be placed upon the sale of infected food and the movements of infected animals. On each of these questions papers will be obtained from the highest British and Continental authorities as the basis of the debates, which ought, therefore, to prove exceedingly instructive and interesting. Though less attractive, the prevention of tuberculosis and kindred diseases is vastly more important than their cure, and promises very much more satisfactory results.

A Little Girl's Compliment.

The accuracy with which children judge character is well illustrated in the following anecdote:

One wet, foggy, muddy day, a little girl was standing on one side of the street, in London, waiting for an opportunity to cross over. Those who have seen London streets on such a day, with their wet and mud, and have watched the rush of cabs, hansoms, omnibuses and carriages, will not wonder that a little girl should be afraid to try to make her way through such a Babel as that. So she walked up and down, and looked into the faces of those who passed by. Some looked careless, some harsh, some were in haste; and she did not find the one she sought, until at length an aged man, rather tall and spare, and of grave yet kindly aspect, came walking down the street. Looking in his face, she seemed to see in him the one for whom she had been waiting, and she went up to him and whispered timidly, "Please, sir, will you help me over?"

The old man saw the little girl safely across the street; and when he afterward told the story he said: "That little girl's trust is one of the greatest compliments I ever had in my life."

That man was the great and good Lord Shaftesbury. He received honors at the hands of a mighty nation; he was complimented with the freedom of the greatest city on the globe; he received the honors conferred by royalty; but the greatest compliment he ever had in his life was when that little unknown girl singled him out in the jostling crowd of a London street, and dared to trust him, stranger though he was, to protect and assist her.

Beer and Milk for Sleeplessness.

“The man who has just left me wanted to know if I could cure him of insomnia,” said a well-known New York doctor recently. “He said he could not sleep unless he drank a bottle of beer every night just before going to bed. Now, I’ll give you a prescription for sleeplessness for all the world to read. It is simply this: If you cannot sleep, the probability is that it is because your stomach is empty. Get up and eat a cracker or two and drink a glass of milk, and go back to bed again; then you will sleep. The rule with all the animal kingdom is to sleep on a full stomach. Man has not yet ceased to be an animal. Beer is not so good as milk, but a bite of some light food is better than either.”

Practical Instruction in Cooking for Invalids.

We learn from a paper in the *Johns Hopkins Hospital Bulletin* that a regular department for teaching the science and practice of cooking for invalids has been established in that hospital. The necessity of a qualified nurse being competent to prepare not only well-cooked but inviting food for an invalid under her care is so apparent that any argument in its favor would be supererogatory.

The writer of the paper, Superintendent of Nurses Isabel A. Hampton, states that the chief requisites, as well as the chief expenses, have been a competent teacher and a well-equipped kitchen. For the latter an investment of \$124 is required; the kitchen utensils, tin and granite ware, crockery and china, costing \$70, the range \$20, tables \$8, a dresser \$3, china closet \$3, sink \$15, and miscellaneous articles \$5. The annual expenses would be about \$500; the teacher’s salary being \$30 per month, teaching material being about \$8, and fuel \$1.50 per month.

The Lesson of the “Lingo Case.”

The recent conviction of the negro, Lingo, in New Jersey, for murder in the first degree, and the utter indifference with which it is reported that he accepted the jury’s verdict, urges us to utter, in print, a warning thought that we have long entertained. We are well satisfied that the typical negro is a brute, in the sense in which we would apply this term to a dog or a horse or a wolf. He is endowed with passion, just as is the dog, yet he lacks the moral power and the intellectual ability to restrain and control this passion. We are not speaking of intelligent colored persons now, but of the “typical, ignorant negro.” Such being the case, we should never forget that the brutal passion which, if aroused, may completely dominate his mechanism will make a negro a dangerous animal; and since such animals are full of lust, we should be extremely careful not to leave our families, unprotected, to the danger that might arise from the passion of a negro—a passion which we have no more right to expect him to control than we would have to expect the same self-control from a dog or a bull.

The Home of the Mechanic.

The skilled workman in one of our large up-town mills is not a dissipated man; on the contrary, he is very domestic and fond of his family; but, unfortunately, his wife is not a neat, tidy woman, though she loves her husband devotedly. Hence, when he comes home to a house that is not clean and tidy and neat, is it any wonder that he yields to the temptation to have an hour's chat with his friends in the corner saloon. He won't get drunk, because he does not care enough for liquor to drink to excess, besides which he knows that excessive drinking will interfere with his work. However, he has four or five beers for the sake of sociability, and goes home to bed "perfectly sober." The next morning he goes to work on time, but his work is not as well performed as it would have been if he had not drunk that beer. Hence we see the employer losing money and the employe failing to rise, all because this particular woman failed to realize the importance of cleanliness, neatness and tidiness.

The Shape of Our Heads.

While it may possess no special hygienic significance (since the shape of the head is something over which we may have no particular personal influence or control), it yet is a matter of interest to learn something of the shape of the heads of some of our prominent men in conjunction with the special characteristics that have served to make these men prominent. If we were to saw through Governor Pattison's head a little above his ears, taking the circumference that is encircled by the Executive beaver, this is what we would see. Did you ever see a more evenly outlined head, and did you ever know a more evenly-molded man? His most intimate friends have never seen him excited, and his whole official life displays a nature remarkable for its symmetry, so that in this instance, at least, the head would seem to suitably fit the man.



Governor Pattison's. Size, 7 $\frac{1}{4}$.

Horace Greeley was another man who had a great, big national reputation for common sense, or, as we would vulgarly say, he had "a level head," and certainly the physical conformation of his head conforms to this estimate of his character. Jay Gould is a genius; in his way he is unique. There is no man his equal in his particular attributes in the whole wide world. While we might regard Governor Pattison and Horace Greeley (with their "level heads") as very high types of "common-sense" humanity, we must accept Jay Gould as a phenomenon, in so far as he is mentally totally unlike any other living man, and as we look at his head we see that it lacks the symmetry of the former two. It is a wonderfully strong, but it is not a symmetrical head.



Horace Greeley's. Size, 7 $\frac{1}{8}$.

A. J. Cassatt is known the world over as a railroad man, his claims to prominence being based upon his special ability in this special line. We know not whether it be but chance, or whether

there be any relation between them, but his head certainly has something the shape of a railroad—two long, narrow parallel lines. Mr. Charles H. Cramp builds ships not unlike the shape of his own head, sharp in front and broad behind, and no one excels him in his particular line; while Senator Sherman's broad forehead and almost square head is somewhat typical of his blunt and "broad-gauge" character. While the seat of intellect is rather in the forepart of the head, the dominion of brute force, the residence from which the muscular system is directed, lies to the rear.



Mr. Jay Gould's.
Size, 6 $\frac{1}{4}$.

Who has greater control over his muscles than John L. Sullivan? and see how much more comprehensive is the rear than the anterior portion of his head. Finally, let us look upon the mas-



Chas. H. Cramp's.
Size, 7.

sive but irregular outline of General Sheridan's head, and as we recall his brilliant deeds of military daring that electrified the world, and contrast with them his early and premature and unnecessary death, let us realize that there may be something, after all, in the shape of a man's head. While we are not prepared to admit that phrenology is a science, yet as we study these heads



A. J. Cassatt's.
Size, 7 $\frac{1}{4}$.

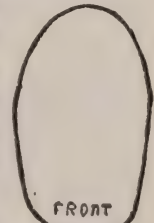
and reflect upon the characteristics of their owners, we incline to think that possibly a man or woman may gain some useful points from a knowledge of the contour of their heads. We cannot as-

sert it as a fact, but fancy leads us to suggest that a man with an even head, such as Governor Pattison's or Horace Greeley's,



John L. Sullivan's.
Size, 7 $\frac{1}{4}$.

might be regarded as a man who could safely trust to his instinct, so to speak, that he might be a man whose cerebral machinery was so well adjusted that it would, so to speak, work well automatically; while those with irregular outlines, while brilliant and exceptionally endowed in certain directions,



Senator Sher-
man's. Size, 7 $\frac{1}{4}$.

might be men whose nature might be dominated by this special endowment unless they were careful to practice

the habit of self-control. Understand, we do not assert these suggestions as facts, merely throw them out as hints. If, however, there be any grain of truth in our idea, then the practical application thereof would be that when a person finds that he has an irregular outline to his head, he should feel himself in need of the cultivation of self-control, and since this practice can hurt no one, we feel quite safe in making this recommendation, whether our idea as to heads be correct or not.



General Sheridan's.
Size, 7 $\frac{1}{4}$.

Causes of Wakefulness.

Continued wakefulness is a crying call to review one's habits and see what is wrong. Be sure the shoe pinches somewhere, and soon its effects will be felt

in the life centers of the body. There is, perhaps, mental unrest, irritation or overwork, in which laziness is to be assiduously cultivated. We may depend upon it there is some want of balance. One chord is played upon too much, others are silent, and so the mental mechanism is all out of tune. Wisdom, then, dictates a reconstruction of habits. At all events the wise person will not resort to opium, chloral or any other sedative that steals away life while soothing it, and fixes habits which cannot be overcome.

Much depends upon the power of dismissing thought and becoming almost a blank. Napoleon had this faculty and many another noted person. The late Lord Napier was believed by the British officers to owe his immense strength and power of endurance to the faculty of going to sleep at any moment when not particularly engaged. One of the famous politicians of Massachusetts, now an old man, yet with the vigor of a boy, has the same gift. In all these and in similar cases there are both concentration and determination.

By an effort of the will thought is withdrawn from its accustomed channels and allowed to trifle with fancies, that come and go like soft clouds in a summer sky, like the lapse of an indolent tide upon the beach, or the breathing of a slumbering infant. In fact, to let thought drift upon any one of them has a somnific influence. There must be a passive determination to follow these gentle undulations out into space and lose one's self there. It is a cultivable tendency and becomes a habit.—*Good Housekeeping*.

To Relieve an Overworked Brain.

A Swiss doctor says that many persons who extend their mental work well into the night, who during the evening follow attentively the programme of a theater or concert, or who engage evenings in the proceedings of societies or clubs, are awaked in the morning or in the night with headache (the *Sanitary Inspector*). He is particular to say that he does not refer to that headache which our Teutonic brethren designate *Katzenjammer*, that follows certain convivial indulgences. This headache affects many persons who are quite well otherwise, and is due in part to the previous excessive work of the brain, whereby an abnormal flow of blood to that organ is caused; in part to other causes, for example, too great heat of rooms, contamination of the air with carbonic acid, exhalations from human bodies, and tobacco smoke.

For a long while the doctor was himself a sufferer from headache of this kind, but of late years has wholly protected himself from it by simple means. When he is obliged to continue his brain work into the evening, or to be out late at nights in rooms not well ventilated, instead of going directly to bed, he takes a brisk walk for half an hour or an hour. While taking this tramp he stops now and then and practices lung gymnastics by breathing in and out deeply a few times. When he then goes to bed, he sleeps soundly. Notwithstanding the shortening of the hours of sleep, he awakes with no trace of headache. There exists a clear and well-known physiological reason why this treatment should be effective.

Clothing and Disease.

A large amount of clothing is made in New York city, mainly for the out-of-town trade, in tenement-house rooms, which have acquired the title of "sweaters' dens," from their filthy and crowded condition. It is claimed (says the *Medical Record*) that much of this clothing comes from quarters where disease is rampant, and it is feared that the germs of such infectious diseases as diphtheria, smallpox, measles, scarlet fever, etc., may be distributed through the country by means of clothing made where these diseases are prevalent. The Clothing Operatives' Union, of Boston, has sent an agent to investigate the matter and see whether the complaints about the dangerous character of the clothing are well founded. If substantiated an effort will be made to secure legislation on the subject.

"Pain in the Stomach."

The other day a little boy, sitting at the table, eating oatmeal, suddenly complained of a *pain in his stomach*, and was about to cry. "Go to the water-closet," we suggested. He did, had a copious evacuation, and felt all right. Now, we ask parents, how often do your children thus complain of "a pain in the stomach," yet how seldom do you send them to the water-closet as a means of cure, resorting rather to a mustard-plaster or a hot-water bag, or rubbing, or the like? We must remember that while an adult may comprehend the significance of "a pain in the stomach," the child will not; yet such a pain is most frequently nature's voice, saying that the bowels are full and require evacuation. Therefore, when your children so complain, try our remedy; it will not always work, but you will be surprised to see how frequently it will be effective.

A Rational Cosmetic.

One year of good exercise will do more for a woman's beauty than all the lotions and pomades that were ever invented. Interesting as are the changes produced in a man by proper physical training, the change in a woman is more striking and significant. Exercise seems to have a particularly immediate effect on a woman's complexion. I have witnessed simply marvelous changes in the complexion, form and disposition of women under light training. I have in mind one well-built girl who carried herself poorly, breathed badly and had an unsatisfactory complexion. She joined a gymnasium, taking the lighter exercises, and began walking a good deal. In a few months a remarkable change had been produced. The unanimated pose had disappeared, the breathing was better (though still not what it should be, no special training having been directed to the lungs), and the complexion was so clear that one could scarcely credit the change. Under my own training I have watched most interesting changes as a result of breathing exercises alone, and the extent to which locally directed exercises have improved forms that were considered hopeless would not be believed save by observation.—*Sanitary Inspector.*

Mrs. Hawkeye.

Perhaps you have never met Mrs. Hawkeye and her little girl (says the *Philadelphia Times*). The queerest thing about the Hawkeye family is that they always wear large sun-bonnets.

Mrs. Hawkeye is a paper lady, and all boys and girls that are handy with their scissors may have Hawkeye households of their own. In the right-hand section of the accompanying picture you see Mrs. Hawkeye speaking to her little girl.



In the left-hand section of the picture you see how Mrs. Hawkeye is cut out of a folded paper. The line A, B, C, shows the whole or folded edge. You can easily trace the outline that you are to cut. When you have cut it, fold over the top part, which is the bonnet, making the fold on the dotted line; then you will at once see the crown and cape take shape. Now fold the arms over and you will have Mrs. Hawkeye complete. The little girl is made in the same

way, only that she is smaller and her dress is cut a little shorter. You may make the bonnet a different color by using paper of different colors on the two sides.

What is a "Public Funeral?"

In most of the towns in which regulations relating to Infectious and Contagious diseases are in force the law reads: "There shall be no public funeral of any person dead from Smallpox, Scarlet Fever, Measles, Diphtheria or Typhus Fever," says Dr. C. A. Lindsley, the Secretary of the State Board of Health of Connecticut.

The question therefore often arises for the consideration and decision of the Health Officer: What is a public funeral in the meaning of the law?

The phraseology is unfortunate and open to criticism, because the expression "public funeral" is a misuse of words, and therefore the words being wrongly employed carry with them a wrong meaning. Public funeral is tautology. Funerals are necessarily public. The definitions of the word "funeral" all imply publicity. Webster thus defines "Funeral:" (1) "The ceremony of burying a dead human body; the solemnization of interment; obsequies. (2) The procession of persons attending the burial of the dead; the show and accompaniments of an interment." And so the joining of the word public, as descriptive of a funeral, is confusing and leads to the notion that there is another sort of funeral than a public one, which is permissible.

It would be better if the law was expressed thus: There shall be no funeral; or, there shall be no public burial of any person dead from smallpox, etc.

These words would remove the ambiguity of the term "Public Funeral," and make the meaning and purpose of the law clear and definite.

The obvious object in making such a regulation is to reduce to the minimum the risk of spreading infection. The best means of doing this are by disinfection and isolation. If isolation of the patient was necessary before death, the isolation of the body is no less so after death. If it was important to prohibit visitors to the sick person and even to the house in which he was sick, lest the infection might be carried from the infected things therein, it is not the less important to exclude visitors from the infected house after death, and until the processes of purification be completed.

Hence it is that a private burial should be understood to mean the exclusion of all participants in the proceedings, excepting such as may be necessary to accomplish that object in a decent and orderly manner, and such as will suffer no additional exposure by their presence.

It need not be understood, however, to prohibit a clergyman from holding any brief religious service, if it would be a consolation to the friends, in the infected house, *in the presence only of those who have already been exposed by living in the house, providing no others are admitted*, and provided always that the clergyman himself take all necessary precautions against spreading the contagion.

In short, exactly the same reasons which denied visitors to the house and unnecessary personal intercourse with the sick person before death, exist in undiminished force until the body of the deceased has been removed and buried, and the house in which it died has been disinfected.

Quarantine at New York.

Mr. Henry D. Plimsoll, in a letter to the *Times*, calls attention to the antiquated system of admitting ships to the port of New York, and justly charges them with maintaining quarantine, "the offspring of ignorance," during this enlightened decade. Vessels arriving here after sundown must remain at anchor in the Narrows until the following day at sunrise; and, as the sun sets in mid-winter at about 4.30 o'clock and rises about 7.30 o'clock, it follows that a detention of about fifteen hours may ensue, and this, says Mr. Plimsoll, in the present age, is just as absurd as the ancient system of forty days' detention, as implied by the word quarantine, derived from *quarenta*, forty.

Medical science, he adds, in the two continents advances side by side, and the cable places them in immediate communication, so that any disturbance in the sanitary condition of any part of one of the continents is at once communicated to the other, and, therefore, can be specially guarded against.

Quarantine, in its original sense, has been abolished from all the countries of Europe, except Spain and Portugal. For it there is substituted the system of inspection, and detention only of vessels with a foul bill of health or containing persons suffering from infectious fevers. The New York quarantine is, of course, not a severe one, but it is annoying and unnecessary. The *Medical Record* trusts that Mr. Plimsoll's letter will set the authorities to thinking, for it is not the first time this just complaint has been made.

The Tripod of Life.

Dr. J. B. Chisholm (*Southern Practitioner*) says that the perpetuation of animal life depends upon the triple forces residing in the heart, brain and lungs. Death occurs directly or indirectly as a sequence of the disturbance of this equipoise of vital forces. It often happens that we are in doubt as to the exact manner of dying, whether it be due chiefly to coma, asphyxia or syncope. As a matter of fact the solution of the question of death is of less importance than the preservation of this equipoise of forces during life. The civilization which furnishes this condition is the one best adapted to prolongation of life. The undue stimulation of brain and nervous force by our present method is the horn of the dilemma which merits consideration. Within certain limits, brain and nervous action are strictly physiological, and invigoration of the nervous tissue is the result. With our present mode of living, how long it may require to convert us into a nation of madmen God only knows. To-day all our brain force is used in thinking and feeling until the sympathetic system calls in vain for more power to carry on organic life. With the present order, a system of gymnastics rigidly enforced, accompanied by mental relaxation, seems to offer our most reasonable hope. Something may be done by practical therapeutics, including nervines, tonics and electricity.

Relief for Corns.

It is said that more people buy remedies to relieve their corns than to help any other trouble, not even excepting disease of the liver or lungs. Yet it is safe to say that not one of these millions of sore toes would have needed treatment if proper care of the feet had been taken. An article in *Good Housekeeping* has the following : In the first place, a frequent and thorough bathing of the feet is one of the best possible (though not infallible) preventives of corns. Some time during each 24 hours, summer and winter, the feet should be bathed thoroughly, and when there is a tendency to sweat or they are subjected to hard usage, a night and morning bath is preferable. But the hard-working man or woman may think this too great a waste of time. It will not require many minutes to bathe the feet thoroughly twice a day, for the task is comparatively light when performed at short intervals ; and to say nothing of the added comfort, the prevention of diseased condition is well worth all the time and trouble. The feet require soap and water as much as the face and hands, and an argument against one may with equal force be made an argument against all. Feet thus bathed will be comparatively free from corns, bunions and callouses ; dead and wrinkled skin will be unknown, and disorganized nails a rarity. Still it is a fact that corns occasionally baffle all known preventives, and put in an appearance under the most forbidding conditions, and in the most annoying and provoking positions. As they are due to certain pressure exerted by the boot or shoe, they may be smothered in infancy, so to speak, by a change of footwear. Having several pairs of shoes, and changing them daily or regularly at longer intervals, will enable the wearer quite frequently to avoid corns, even after they show signs of formation.

The Heart in Athletics.

A British surgeon states that of 5,000 decrepit or aged soldiers that have been brought under his notice, fully 80 per cent. were suffering from heart trouble in one form or another, due to forced exertion. He predicts that as large a percentage of the athletes of to-day will be found twenty-five years hence to be the victims of the same causes engendered by muscular strains. With regard to the effect of exercise on the prolongation of life, it may be said that there are more people living in France who have passed the age of 60 than there are in England, the home of athletic sports, and there is probably no nation in Europe more averse to muscular cultivation for its own sake than the French. Great athletes die young, and a mortality list of Oxford men who had rowed in the 'varsity races shows that a comparatively small percentage of them lived out the allotted time. If our readers will bear in mind the difference between "athletic sports," as typified by *contests*, and rational exercise, as typified by walking, riding, rowing, skating and the like in *moderation*, then will they be prepared to ratify the above assertion. Exercise really means motion; and with motion as with roast beef, while moderation means health, excess means disaster and disease. Exercise carried to the point of exertion is disastrous; exercise confined within the limit of fatigue is wholesome.

The Koch Consumption Cure.

Without any prejudice, simply as the result of scientific conviction of its inefficacy, we, in our issue for last December, uttered a word of caution or warning against the Koch lymph. That our views then expressed were correct, this latest news from Berlin, in a correspondence to the *Medical and Surgical Reporter*, bears ample evidence:

"The storm of enthusiasm has passed, and the low tide of cold inspection and calculation has set in. The miracle is—not what little there is left of the glowing anticipations of the Koch Chauvinists, but that there is anything left at all. It required the stern and pitiless voice of Virchow to restore to the profession the common sense which apparently had been completely lost. It required, moreover, unwarrantable sacrifices of human lives to convince the profession that the millennium of medicine has not yet arrived. Virchow, as I have learned from a good source, will continue his warfare against the lymph without zeal or malice, but with a persistence which will ultimately prove fatal to the young remedy. As to the deaths caused by tuberculine, I regret to state that their number is not a small one. Sudden failure of vital energy caused by the artificial fever, hemoptysis, and miliary tuberculosis are the chief sources of danger from the exhibition of the remedy. Quite recently a young medical man who had contracted a catarrh of the apex was hurried to death by a rapidly developing miliary tuberculosis under the influence of tuberculine.

"Koch's path during the last two months was not a rosy one. His private residence in the Thiergarten, formerly an ideal of seclusion and privacy, soon became the center of attraction. In spite of all possible signs and inscriptions, such as 'moved out of town,' postmen and telegraph messengers vied with patients and doctors in besieging the house. He actually did move temporarily to a friend's house, but was hunted and found out by two Western practitioners. There was nothing left for Koch but to flee. Those anxious to see him can do so at Luxor or Ghizeh, near the pyramids which are fortunately unable to interview the German doctor. Koch's flight had, besides, another reason, viz., the gradual falling off of his admirers and the steady increase of his opposers. It is rumored that he left worried and full of anxiety.

"Possibly it will interest you also to learn what the Berlin populace think at present of the remedy. The common feeling is very much opposed to the Koch cure, and it is not too much to say that to-day no intelligent Berliner would submit to its exhibition on his own person."

The "Rest Cure."

This term, to the average individual, conjures up the image of an expensive physician, a thoroughly trained nurse and a lot of paraphernalia. Nonsense; rightly understood it is within the reach of all, and, as a curative agent, its importance simply cannot be estimated. Here it is in a nutshell:

A New York woman who returned recently from a course of it under English advice tells how she sailed away last March, accompanied only by her husband, who bade her good-by at the doctor's door and came back to New York and their family, while she entered upon a three months' practical suspension of animation. No member of her household during that time communicated directly with her. It was settled before she went into retirement that if any serious emergency should arise she was to be informed, otherwise no news was to be good news. She had a large, airy room with two or three peaceful landscapes hanging on the walls.

Books, papers, a bit of work, anything that could interest her, were banished, however, and her existence reduced as nearly as possible to nil. She was kept in bed and fed without being permitted to sit up. Her food was simple but nutritious, and came with the regularity of clockwork. For exercise, vigorous massage and sponging were daily employed. The first two or three days were well-nigh unbearable. After that she became contented; life, droning on in this monotonous, uneventful way, seeming even pleasant and soothing. Her physician only saw her about once a week, and her nurse was no sociable Sairy Gamp, but a deft, quiet, middle-aged woman, soft of tread and placid of face, who was no sort of distraction, but to whom, however, one could get wholly used and unconsciously attached.

At the end of the three months she got up as suddenly as she had lain down, dressed and walked three miles. Then her husband and children went to her, and she traveled with them for four months, knowing no fatigue, and with more endurance than any other member of the party. Such it is to be wholly rested.

Cannot anyone *rest* as did this New York woman? And, take our word for it, if you are peevish and fretful and irritable and "*run down*," such a course will work wonders. Try it. There are lots of persons in this world dosing themselves with drugs who merely require a thorough and complete rest.

State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania.

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BENJAMIN LEE, M.D., of Philadelphia.

PLACE OF MEETING,

Supreme Court Room, State Capitol, Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Thursday in May, July and November.

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COMMUNICATIONS.

Drainage and Sewerage of Norristown.*

BY P. Y. EISENBERG, M.D.,
Member of the Board of Health of Norristown.

I THINK it was Cowper who wrote that "God made the country, and man made the town." From a sanitary standpoint there are two widely different conditions expressed in this sentiment—one having all the essential requisites for the development and prolongation of health and life, the other possessing such favorable surroundings as foster disease and death.

Under the sunlight and in the pure air of the country, countless forms of life abound, each running rapidly to decay; and, as each dies, myriads of lower organism quickly seize and feed upon it, and out of the destruction of the old develops new life. From year to year, and from century to century, do the green fields and forests maintain a perfect balance between the formation and destruction of life. But now man steps in with his artificial constructions, and sweeps away this perfect equipoise. Under his foot the green earth grows bare. By the work of his hand the life-giving sunlight is either shut out or falls upon the burning sand, and the virgin soil becomes saturated with the excretions of his body. Thus the invader of nature's domain transforms the ground around his dwelling, as well as the air in and around it, into a fertile soil for the germs of disease; and when pestilence sweeps through his home, amid the anguish and the moans of his sick and his dying, he speaks of this trail of sorrow as a "dispensation of Providence," and invokes "God to shield him from the terrible plague," which was planted by his own hand.

"Go home," said Lord Palmerston to a Scotch delegation who were asking for a day of fasting and prayer to protect them from pestilence; "go home, and see that your towns and cities are freed from those sources of contagion which, if allowed to remain, will breed pestilence and be fruitful in death, in spite of all the prayers of a united but inactive people."

This blunt advice, though given many years ago to the Scotch Presby-

* Read before the Pennsylvania State Sanitary Convention.

terian Delegation, is in strict accord with the most recent teachings of sanitary science. In the sinks, drains, cellars, gutters and the ground that receive excrement and liquid refuse are found the sources of contagion which the English Premier had in mind. From these constantly arise effluvia laden with germs or microbes (that cause disease), which, under favorable conditions, multiply in almost incredible numbers in a few brief hours.

For the purpose of preserving the purity of the air in densely-populated areas, proper drainage and sewerage are as indispensable as the maintenance of the natural secretions of the human body are essential for the promotion of health. In fact, drainage and sewerage are the excretions of a community, and should, therefore, be carried far beyond its territorial limits. Extensive researches in Germany, England and America have established the fact that malaria, diarrhoea, rheumatism, bronchial catarrh, and especially pulmonary consumption, are directly influenced and their development promoted by damp cellars within and wet soil around dwellings.

Drainage for profit and convenience, as a means of reclaiming land for agricultural purposes, has been a matter of history for all time, but drainage for the better preservation of health is a sanitary measure of modern times. In towns and cities drainage is designed to accomplish two results: First, the removal of storm-water from roofs, yards, streets and pavements; second, the location of a lower level for ground-water.

The first result is generally accomplished by surface drainage, by means of paved gutters. The best sanitary engineers agree that, whenever practicable to do so, this method is the best possible for the disposal of storm-water and street-wash. Sometimes, however, because of too great accumulation of storm-water at a given point, it becomes necessary to relieve the overflowing gutter by sub-soil pipes or drains. The second result is effected by underground channels. This kind of drainage is absolutely necessary in all water-logged soil wherein the level of ground-water approaches the surface. It is because of this high-water level that we have water in the cellars of dwellings.

Norristown possesses excellent natural facilities of both soil and slope for a thorough system of drainage and sewerage. The soil is mostly of a sandy formation, therefore very porous; and the slope, approaching either the river or the two streams which traverse the town, is more than sufficient for an exhaustive system of drainage and sewerage.

A topographical investigation of the site of Norristown discloses the fact that, because of the two streams—Saw-Mill Run and Stony Creek—coursing through the town from north to south, three distinct areas for drainage purposes are formed—an eastern, a middle and a western district. The largest portion of each of the three is naturally drained by either Saw-Mill Run or Stony Creek. The great temptation, therefore, is not only to drain, but to sewer the town into these two streams. Herein lies one source of danger to the public health of Norristown, and one which becomes accumulative as the population increases.

The first sewer ever constructed in Norristown was built forty years ago

by the authorities of Montgomery County. It extends from the County Prison on Airy Street to Green Street, then east on Penn Street to Saw-Mill Run, discharging its contents into the bed of that stream. This sewer is but twenty inches in diameter, and built but two feet under the surface of the street. It was designed to carry off sink drainage, liquid refuse and the excretions from the Montgomery County Prison, containing an average population of fifty persons.

In 1885 a short sewer, three and one-fourth feet in diameter, nine feet under the ground, was constructed on Green Street, connecting the prison sewer at the corner of Green and Penn Streets with the Main Street sewer. That part of the sewer on Penn Street leading to Saw-Mill Run was then abandoned. This sewer is subject to repeated flushings by the prison management, but in long-continued dry weather, being so near the surface, the older portion becomes offensive. The newer portion has an inlet at its head by which it is flushed by storm-water.

The change of outlet of the prison sewer from Saw-Mill Run to the Main Street sewer was the result of a suit against the authorities of Montgomery County for maintaining a nuisance in the discharge of all the offal and excrement from the prison into Saw-Mill Run near the planing mill of Guest & Longaker, who were prosecutors in the case. The evidence in the suit disclosed the fact that a few yards northeast of the outlet of the prison sewer is the mouth of the Carson Alley sewer, also discharging equally as offensive matter, though less in quantity, into Saw-Mill Run. The Carson Alley sewer receives the discharges from a slaughter-house and the contents from six to eight cess-pools, and was built by the borough of Norristown.

The next sewer was constructed on Airy Street. Beginning near Violet Street, it extends to Walnut, then on Walnut to Carson Alley, and is three and one-half feet in diameter, and drains the water of a ravine in the eastern portion of the town, known as Bateman's Hollow. This sewer was built twenty years ago, and, strange to say, it passes in front of four or five houses whose cellars contain water all the year around, and yet the owners have failed to put in drains to connect with this sewer; neither have the borough authorities taken any steps toward compelling the property owners to drain their cellars into the sewer as a proper sanitary measure. Almost constant illness is found among the tenants of these houses. The writer of this paper has personal knowledge of cases of rheumatism, bronchial catarrh, diphtheria, malarial fever and typhoid fever in these houses during the past two years.

This sewer, up to its connection with the Carson Alley sewer, only receives storm-water and street-wash. The Carson Alley sewer extends from Walnut Street on Carson Alley to Saw-Mill Run beyond Arch Street. It is three and one-half feet in diameter, and receives storm-water and street-wash by two or three inlets, besides having connections with one slaughter-house and more than a half-dozen cesspools. This sewer bids fair to excel its former rival, the old prison sewer, in polluting and rendering dangerous to that part of the town the sluggish stream of Saw-Mill Run.

The third sewer built in Norristown, and the one of greatest importance, is the Main Street sewer, or the Main Street sewers, for there are two of them, one connecting with the other, and built in form of two inclines, with the union of their highest elevation at Swede Street, the one draining east, and the other west. The East Main Street sewer extends from Swede Street to Mill Street, then on Mill Street to the Schuylkill River. The greater part of this sewer was built in 1873, while the shorter or connecting portion was not constructed until ten years later. It is four feet in diameter, has four side inlets and five corner inlets to receive street-wash and storm-water. Its construction has made it possible to drain every cellar fronting on Main Street which previously contained water. This sewer has water-closet connection, and receives at Green Street, as already mentioned, the sewage of the County Prison.

The West Main Street sewer was built in 1873, from Cherry Street to Stony Creek, and the connecting sewer in 1883. It therefore extends from Swede Street to Stony Creek. It is three feet in diameter, has three corner and four side inlets, has connections with some dozen cesspools, a slaughter-house and a soap-house. In long-continued dry weather it makes itself obnoxious at its outlet into Stony Creek, near Main Street Station. There is, therefore, a continuous sewer from Stony Creek east on Main Street to Mill, and thence to the Schuylkill River.

In 1875 a sewer was built on DeKalb Street, from Main Street to the Mill-race near the river. It is three feet in diameter, and receives cellar drainage and cesspool matter. It has five inlets. In 1886 a short sewer was constructed on Oak Street from Arch to Saw-Mill Run for drainage purpose only. The sole object in building this sewer was to relieve the accumulation of storm-water at this point, which previously produced extensive wash-outs in the streets. No sewage matter enters into this channel.

Last, but not least, is the Marshall Street sewer, which extends from Noble Street to Stony Creek at the bridge. It was built in sections; the older section was constructed in 1875, and the newer in 1889. This sewer is four feet in diameter, has a steep grade, which is flushed by storm-water received by ten corner and five side inlets and drains, cellars, water-closets and a short sewer on Chain Street, some 200 feet long, which receives the refuse and cleansing of the Western Market.

The Marshall Street sewer from the west, like the West Main Street sewer from the east, discharges its sewage into Stony Creek in the midst of a densely-populated district. Both Saw-Mill Run and Stony Creek are sluggish streams, and are roused sufficiently to cleanse their polluted beds only by some prolonged rain or some sudden, violent storm. The fact that nature has given the town these two channels offers the temptation to sewer the town into them, especially into Stony Creek, which, in addition, receives manufacturing waste. When the volume of water in the river is lessened by drought, and none is carried over the dam, Stony Creek becomes very offensive.

A brief examination and summary of the sewers of Norristown disclose the following facts:

(1) That there are two miles of sewers of circular shape, of from two to four feet in diameter.

(2) That they were built more for drainage than for the discharge of sewage.

(3) That no one of these sewers ever runs more than half full even during the heaviest storms.

(4) That no attempt was made or has been made to ventilate these sewers, filled, as they often must be, by foul and noxious gases generated by the decomposition of cesspool matter and sink drainage.

(5) That these sewers were built, as the occasion for them arose, piecemeal at a time, without any direct reference to the sanitary effect of their construction upon the health of the community through which they pass.

The primary object in sewerage towns and cities should be for a better preservation of health, while the thought of profit and convenience should be of secondary consideration. The accumulation of filth from organic refuse, kitchen waste and cesspool deposit increases in a direct ratio with the increase of population. To prevent the soil pollution, which is the natural result of such accumulations, should be the object and aim of a system of sewerage.

Men may stop their ears for a time and treat this matter of accumulation with indifference, but sooner or later some terrible epidemic will burst upon them, like some mighty tornado, filling the streets and houses with the dead and dying. Such was the experience of the city of Memphis eleven years ago. Prior to 1878 yellow fever had a firm hold upon the community, relaxing its grasp somewhat during the winter months, only to renew it more strongly during the following summer. By a system of sewerage devised by that eminent sanitary engineer, Col. Geo. E. Waring, Jr., the death-rate of Memphis in ten years was reduced twenty per cent.

Memphis unclean and unhealthy of 1879 has become Memphis pure and salubrious of to day. This sounds more like a tale of romance than a sanitary truth, and is due to the removal of the cesspool and the substitution of water-closets with sewer connection, the thorough cleansing of the streets, and the prevention of any further soil saturation from sink drainage or kitchen refuse by a complete drainage of the entire city on the separate sewer plan.

Time forbids detail; but suffice it to say that all sewage matter, strictly speaking, enters one system of smooth bore-pipes, which run full when flushed daily from the flushing tank at the head of each sewer. All storm-water is discharged by a separate system of sewers.

For cleansing the sewers of Norristown of organic deposit, the decomposition of which must fill the sewer with noxious gases, reliance is placed upon storm-water alone. All sanitary engineers now agree that this means of cleansing sewers is too uncertain and often too inadequate, especially in winter, when conductors and gutters are filled with ice and snow, or during a long-continued drought.

Rawlinson says: "There should be a flushing chamber at the head of each sewer or drain, and that each flushing chamber should be permanently ventilated." In this he is confirmed by Hering, Morin, Waring and many others.

If storm-water must enter a sewer with sewage matter, then the best form of sewer is the egg-shaped sewer, built with its narrow part downward, making the current strongest and most rapid where the deposit is the greatest. This kind of sewer cleans itself thoroughly, and is gradually being adopted by municipal authorities. The great sanitary question for Norristown is the "abolition of the cesspool." A noted authority says: "Every cesspool is a standing menace to the health of a community as long as it exists, while typhoid fever, scarlatina and diphtheria prevail." In the language of another equally eminent authority we would say: "Vaults and cellars for the reception of the most offensive forms of sewage should not be allowed within the corporate limits of towns and cities." Norristown, with her 20,000 population, has 5,000 of such receptacles, which pollute the soil, and on some of the by-streets make the air almost intolerable after the night fall in warm summer months. Situated as this borough is upon a sandy soil, and possessing an abundant water supply, there is every reason why the cesspool should exist only in history.

According to C. A. Lindsay, M.D., Secretary of the State Board of Health of Connecticut, the death rate of infants and children is greater in the vicinities of vaults than elsewhere.

The effects of a thorough system of sewerage, by which all organic refuse of whatever kind is discharged from the house by means of sewers, are clearly demonstrated by the report of the Secretary of the Board of Health of the city of New Haven, for 1884. In that year 68 per cent. of the infant mortality was upon streets without sewers, and 32 per cent. on streets with sewers. Of the latter—or the deaths occurring on streets having sewers—80 per cent. of that mortality were in houses having no sewer connections, and but 20 per cent. in houses having sewer connections. If these figures mean anything they indicate direct connection between the prompt and efficient removal of all liquid waste and filth and a lower death-rate on sewered streets.

In these days we hear much of pure air and pure water. Our citizens can have neither if the pollution of our soil, wells and streams goes unchecked. The object of sanitary sewerage in a town is to preserve, to a certain extent at least, the purity of these essential ingredients of life and health.

In order to promote and secure such a result, all matter of a putrescible character, whatever its origin, should be completely and entirely removed, not only from the house, but from the town, before it has had time for decomposition. In its fresh condition it is rarely a source of danger, and if it can be delivered out of the town by a sufficient volume of water, which will smother excrement and at the same time promptly and efficiently discharge such sewage, the whole problem of preserving the purity of the air we breathe and the water we drink is solved. The greatest dangers which overshadow the health of this town, from a sanitary standpoint, then, is the pollution of Saw-Mill Run and Stony Creek by the discharge of offensive sewage into these streams, and the maintenance of the germ-generating and disease-producing reservoir, the cesspool vault.

In towns where there is no proper water supply the existence of the vault must be tolerated, but where such supply is found its abolition cannot be begun or completed too soon for the better preservation of the health of the town.

It is entirely foreign to our purpose to have you believe that Norristown is an unhealthy place—for its death rate is low in comparison to most towns and cities—yet this state of health can be made better and the death rate still lower by the sanitary precautions merely alluded to in this paper. The abolition of the cesspool and the institution of a thorough system of sewerage mean less sickness, especially of the infectious type, such as diphtheria, typhoid fever and kindred diseases. Decomposing organic matter—animal or vegetable—can and should be made to subserve the economy of nature outside the corporate limits of the borough, rather than to accumulate and pollute the soil oftentimes within a few feet of dwellings, or in cellars, as is the case in some half dozen places of business on one of our principal streets.

One of the sanitary problems of the present day is the best disposal of sewage. To discharge it into the rivers, whenever it can be done, or to convert it by a system of irrigation into grass and flowers, which beautify the landscape, is the vexed question that confronts the sanitarian.

That nature can thoroughly dispose of decaying organic remains is illustrated by the fact that nothing but the rusty hinges and nails were found upon opening the grave of Roger Williams. Many years ago the remains of the stanch old Baptist clergyman were deposited in the ground; to-day the roots of a tree describe the exact course of the body, beginning with the skull, dividing with the lower extremities and terminating in the heels—all that was once mortal of the founder of Rhode Island has been changed into solid wood, into beautiful apple blossoms with luscious fruit that has been gathered from the branches of the tree. In the language, then, of the late Prof. S. D. Gross, we would say in conclusion: "The great question of the day is the hygiene of our persons, our dwellings, our surroundings, whatever or wherever they may be, whether in city, town or hamlet or country;" and we would add, the two leading factors in the solution of this question are efficient drainage and sewerage.

Rules for the Management of Infants During the Hot Season.*

BY WILLIAM GOODELL, M.D.,
Of Philadelphia.

RULE 1.—Bathe the child once a day in tepid water. If it is feeble, sponge it all over twice a day with tepid water, or with tepid water and vinegar. The health of a child depends much upon its cleanliness.

*At a meeting of the Obstetrical Society of Philadelphia, held April 3, 1873, the undersigned Committee was appointed "To consider the Causes and the Prevention of Infant Mortality during the Summer Months." The following rules, drawn up by this Committee, were revised and adopted by the Society at a meeting held May 1, 1873, and ordered to be published.

DR. WILLIAM GOODELL, *Chairman*.
DR. J. FORSYTH MEIGS,
DR. JOHN L. LUDLOW,

DR. ALBERT H. SMITH,
DR. JOHN S. PARRY,
DR. WILLIAM F. JENES.

RULE 2.—Avoid all tight bandaging. Make the clothing light and cool, and so loose that the child may have free play for its limbs. At night undress it, sponge it, and put on a slip. In the morning remove the slip and dress the child in clean clothes. If this cannot be afforded, thoroughly air the day-clothing by hanging it up during the night. Use clean diapers, and change them often. Never dry a soiled one in the nursery or in the sitting-room, and never use one for a second time without first washing it.

RULE 3.—The child should sleep by itself in a cot or cradle. It should be put to bed at regular hours, and be early taught to go to sleep without being nursed in the arms. Without the advice of a physician, never give it any *Spirits, Cordials, Carminatives, Soothing Syrups, or Sleeping Drops. Thousands of children die every year from the use of these poisons.* If the child frets and does not sleep, it is either hungry or ill. If ill, it needs a physician. Never quiet it by candy or cake; they are the common causes of diarrhoea and of other troubles.

RULE 4.—Give the child plenty of fresh air. In the cool of the morning and evening, send it out to the shady sides of broad streets, to the public squares, or to the park. Make frequent excursions on the rivers. Whenever it seems to suffer from the heat, let it drink freely of ice-water. Keep it out of the room in which washing or cooking is going on. It is excessive heat that destroys the lives of young infants.

RULE 5.—Keep your house sweet and clean, cool and well aired. In very hot weather let the windows be open day and night. Do your cooking in the yard, in a shed, in the garret, or in an upper room. Whitewash the walls every spring, and see that the cellar is clear of all rubbish. Let no slops collect to poison the air. Correct all foul smells by pouring carbolic acid or quick-lime into the sinks and privies. The former article can be got from the nearest druggist, who will give the needful directions for its use. Make every effort yourself, and urge your neighbors to keep the gutters of your street or court clean.

RULE 6.—*Breast-milk is the only proper food for infants.* If the supply is ample and the child thrives on it, no other kind of food should be given—while the hot weather lasts. If the mother has not enough, she must not wean the child, but give it, besides the breast, goat's or cow's milk, as prepared under Rule 8. Nurse the child once in two or three hours during the day, and as seldom as possible during the night. Always remove the child from the breast as soon as it has fallen asleep. Avoid giving the breast when you are over-fatigued or overheated.

RULE 7.—If, unfortunately, the child must be brought up by hand, it should be fed on a milk-diet alone, and that warm milk out of a nursing-bottle, as directed under Rule 8. Goat's milk is the best, and, next to it, cow's milk. If the child thrives on this diet, *no other kind of food whatever should be given while the hot weather lasts.* At all seasons of the year, but especially in summer, there is no safe substitute for milk to an infant that has not cut its front teeth.

Sago, arrow-root, potatoes, corn-flour, crackers, bread, every patented food, and every article of diet containing starch, cannot and must not be depended on as food for very young infants. Creeping or walking children must not be allowed to pick up unwholesome food.

RULE 8.—Each bottleful of milk should be sweetened by a small lump of loaf-sugar, or by half a teaspoonful of crushed sugar. If the milk is known to be pure, it may have one-fourth part of hot water added to it; but if it is not known to be pure, no water need be added. When the heat of the weather is great, the milk may be given quite cold. Be sure that the milk is unskimmed; have it as fresh as possible, and brought very early in the morning. Before using the pans into which it is to be poured, always scald them with boiling suds. In very hot weather, boil the milk as soon as it comes, and at once put away the vessels holding it in the coolest place in the house—upon ice if it can be afforded, or down a well. Milk carelessly allowed to stand in a warm room soon spoils and becomes unfit for food.

RULE 9.—If the milk should disagree, a tablespoonful of lime-water may be added to each bottleful. Whenever pure milk cannot be got, try the condensed milk, which often answers admirably. It is sold by all the leading druggists and grocers, and may be prepared by adding, without sugar, one teaspoonful or more, according to the age of the child, to six tablespoonfuls of boiling water. Should this disagree, a teaspoonful of arrow-root, of sago, or of corn-starch to the pint of milk may be cautiously tried. If milk in any shape cannot be digested, try, for a few days, pure cream diluted with three-fourths or four-fifths of water, returning to the milk as soon as possible.

RULE 10.—The nursing-bottle must be kept perfectly clean; otherwise the milk will turn sour, and the child will be made ill. After each meal, it should be emptied, rinsed out, taken apart, and the tube, cork, nipple and bottle be placed in clean water, or in water to which a little soda has been added. It is a good plan to have two nursing-bottles, and to use them by turns.

RULE 11.—Do not wean the child just before or during the hot weather; nor, as a rule, until after its second summer. If suckling disagrees with the mother, she must not wean the child, but feed it in part, out of a nursing-bottle, on such food as has been directed. However small the supply of breast-milk, provided that it agrees with the child, the mother should carefully keep it up against sickness; it alone will often save the life of a child when everything else fails. When the child is over six months old, the mother may save her strength by giving it one or two meals a day of stale bread and milk, which should be pressed through a sieve and put into a nursing bottle. When from eight months to a year old, it may have also one meal a day of the yolk of a fresh and rare-boiled egg, or one of beef or mutton broth into which stale bread has been crumbed. When older than this, it can have a little meat finely minced; but even then milk should be its principal food, and not such food as grown-up people eat.

BRIEF RULES FOR CASES OF EMERGENCY.

RULE 1.—If the child is suddenly attacked with vomiting, purging and prostration, send for a doctor at once. In the meantime, put the child for a few minutes in a hot bath, carefully wipe it dry with a warm towel, and wrap it in warm blankets. If its hands and feet are cold, bottles filled with hot water and wrapped in flannel should be laid against them.

RULE 2.—A mush poultice, or one made of flaxseed meal, to which one-quarter part of mustard flour has been added, or flannels wrung out of hot vinegar and water, should be placed over the belly.

RULE 3.—Five drops of brandy in a teaspoonful of water may be given every ten or fifteen minutes; but if the vomiting persists, give the brandy in equal parts of milk and lime water.

RULE 4.—If the diarrhœa has just begun, or if it is caused by improper food, a teaspoonful of castor oil or of the spiced syrup of rhubarb should be given.

RULE 5.—If the child has been fed partly on the breast and partly on other food, the mother's milk alone must now be used. If the child has been weaned, then it should have pure milk with lime water, or weak beef-tea, or chicken-water.

RULE 6.—The child should be allowed to drink cold water freely.

RULE 7.—The soiled diapers or the discharges should be at once removed from the room, but saved for the physician to examine at his visit.

FOR THE CONVENIENCE OF MOTHERS THE FOLLOWING RECIPES FOR SPECIAL FORMS OF DIET ARE GIVEN :

Boiled Flour or Flour Ball.

Take one quart of good flour; tie it up in a pudding-bag so tightly as to get a firm, solid mass; put it into a pot of boiling water early in the morning, and let it boil until bedtime. Then take it out and let it dry. In the morning, peel off from the surface and throw away the thin rind of dough, and with a nutmeg-grater grate down the hard, dry mass into a powder. Of this from one to three teaspoonfuls may be used, by first rubbing it into a paste with a little milk, then adding to it about a pint of milk, and, finally, by bringing the whole to just the boiling-point. It must be given through a nursing-bottle.

An excellent food for children who are costive in their bowels may be made by using bran-meal or unbolted flour instead of the white flour, preparing it as above directed.

Rice Water.

Wash four tablespoonfuls of rice; put it into two quarts of water, which boil down to one quart, and then add sugar and a little nutmeg. This makes a pleasant drink.

A half pint or a pint of milk added to this, just before taking it from the fire, and allowed to come to a boil, gives a nourishing food suitable for cases of diarrhoea.

Sago, tapioca, barley or cracked corn can be prepared in the same manner.

Beef Tea.

Take one pound of juicy lean beef—say a piece off the shoulder or the round—and mince it up with a sharp knife on a board or a mincing-block. Then put it with its juice into an *earthen* vessel containing a pint of tepid water, and let it stand for two hours. Strain off the liquid through a clean cloth, squeezing well the meat, and add a little salt. Place the whole of the juice thus obtained over the fire, but remove it as soon as it has become browned. Never let it boil; otherwise most of the nutritious matter of the beef will be thrown down as a sediment. Prepared in this way, the whole nourishment of the beef is retained in the tea, making a pleasant and palatable food. A little pepper or all-spice may be added if preferred.

Mutton Tea

may be prepared in the same way. It makes an agreeable change when the patient has become tired of beef tea.

Raw Beef for Children.

Take half a pound of juicy beef, free from any fat; mince it up very finely; then rub it up into a smooth pulp either in a mortar or with an ordinary potato-masher. Spread a little out upon a plate and sprinkle over it some salt, or some sugar if the child prefers it. Give it with a teaspoon or upon a buttered slice of stale bread. It makes an excellent food for children with dysentery.

Treatment of Habitual Constipation.*

BY W. WASHBURN, M.D.,
Of New York.

THE notes of one of the most long suffering and in some respects serious cases of mine will illustrate. I was called, January 2, 1889, to see Miss A—. I found her in a state of collapse, with cold perspiration and thready pulse; she was extremely pale. Was informed that she had just had a movement of the bowels, the first for five weeks. This was said not to be unusual as to length of time or condition following movement except that now she was "weaker and fainter." Stimulants were given by the mouth, ammonia by inhalation, and hot applications were made to the extremities. The patient soon regained strength and was about as usual. Having been the family physician for a long time I had, of course, noticed that the patient was of a sallow complexion, and

* From the *Medical Record*.

was much troubled with what some of our best skin specialists had been treating for acne, but never, according to the patient, had her bowels been the recipient of the slightest care by them, not even the courtesy of an inquiry as to how they were. The treatment for the acne went on pretty regularly for over two years, as did the treatment of the bowels, periodically, at the hands of now this one and now that, until finally it had been received by the family some time before I knew them as the inevitable, and nothing was done for a long time about the bowels; but, as before stated, the acne received almost constant attention at the hands of one or another specialist. Careful questioning elicited the usual causes for constipation, or at least very common causes—irregular habits as to eating, and in short irregular habits generally, frequent purgation in the early history of the trouble, followed later by purgation when the conditions would no longer permit the bowels to go unmoved, which was usually, for the past two years, between four and five weeks, with a constant tendency to longer periods between the movements. Hot drinks, as usual, contributed to the general bad results. Careful consideration was given to the diet and the patient's tastes consulted, and a line of diet was laid out comprising the cereals that were best tolerated by the patient—fruits, especially baked apples, cooked peaches and prunes, oranges, etc.

Citrate of magnesia was ordered to be taken half an hour before breakfast, in quantities that would not cause purgation. This was strongly insisted upon, for experience has demonstrated that frequent purgations cause constipation, even in the healthy. A large-sized wine glass was taken as the first morning draught, with instructions gradually to increase the dose if necessary to produce a movement. The unfortunate tendency to take medicine "to save it" was combated by having the magnesia in siphons, so that it would be perfectly preserved until used. A regular time of day was selected in which to solicit movements. In order to take advantage of the effect of digestion it was ordered that this soliciting should take place half an hour after the noon meal, and that calculation be made to pass urine at this time, as a further aid to the bowels. Exact regularity was insisted upon in this matter, with instructions to persevere from day to day, taking an enema of warm water only every third day if the bowels failed to move without. The patient was told that as heat had a tendency to constipate and cold to move the bowels cold drinks should be chosen. Beer was substituted for tea to a large extent, ice-water was taken in moderation, milk was only to be used very sparingly. Only one injection of water was used, the bowels moving at least as often as on alternate days thereafter. Gradually the quantity of magnesia was made less and less, until within three weeks none was taken. In the tapering-off process a glass of cold water was taken on each alternate morning, the magnesia being taken on the other. An orange was then taken for some time each morning before breakfast, after medicine was stopped. The patient was gaining in flesh; complexion was improving, and, much to the delight of all, especially of the lady herself, the acne was now gone. The patient has been under constant observation ever since, and no return of the old troubles has ever occurred.

This case is a fair specimen of many that can be produced from my notes of cases. Originality is not claimed for this mode of treatment, and yet the literature on habitual constipation, so far as I know, does not anywhere combine all these elements of treatment. The points of treatment seem all important in the matter of regularity, solicitation, and non-purgation; and it is believed that these matters, faithfully carried out, together with proper diet and the mildest possible laxatives, will be efficacious very quickly in many if not all cases where there is no actual paralysis of the bowels.

Some Causes of Defective Vision.

BY J. HARVEY MOORE, M.D.,
Of Scranton, Pa.

THE old saying that prevention is better than cure is nowhere more true than in the preservation of the eyesight. This subject is too vast to admit of but a cursory glance at a few of the most common habits of life which directly or indirectly cause defective vision, either by changing the shape of the eye, producing what is termed a refractive error, the kinds of which are numerous, or by producing actual disease of some of the delicate structures of the eye. We can say, to begin with, like the man who said the training of a child should begin twenty-five years before its birth, that heredity is a strong factor in eye-troubles. A child may inherit eyes which are imperfect in shape, which comes under the head of refractive errors, or he may inherit a predisposition to various eye diseases. But what concerns us most for the immediate present is the care of the eyes as we find them. The great slaughter of eyes as well as lives, after the period of infancy is passed, begins when the child enters school. Statistics show that in many instances the proportion of children with defective vision on entering school is one per cent., while from fifteen to twenty per cent. have defective vision when they reach the highest grade. This is a sad tribute to our public school system.

Few persons seem to realize that the eyes are the hardest worked organs of the body, and through them is the greatest expenditure of vital force. They are never at rest during our waking hours. Toiling from morn till late at night three hundred and sixty-five days in the year, it is small wonder that they become exhausted and fail in the performance of their arduous tasks. Aside from what may be termed legitimate use of the eyes, they are taxed and abused in many ways wholly inexcusable. Reading on the cars, in the twilight, lying in bed, by a poor light or an excessively bright light, is very injurious and results disastrously. There is a strong tendency while confined to the house by some slight ailment, or when convalescing from some illness, to employ much of the time in reading. This is a terrible mistake, fraught with most serious consequences. Hundreds and thousands of cases of eye-trouble date from some prostrating

illness where proper precautions were not taken during convalescence. This is a matter of the greatest importance and is too little dwelt upon. Impairment or entire loss of vision is one of the many sequelæ of la grippe, which has been the scourge of this and most other civilized countries of the world. Many persons come to me and say, "Doctor, my eyes were all right until I had the grippe." The extreme prostration, which is one of the most striking features of la grippe, weakens the rotating muscles and muscles of accommodation of the eye, in common with the other muscles of the body, and by forcing these weakened muscles to perform the task of fixing and focusing the eye in reading or any other fine work must, and does, produce serious crippling of the eyes, many of which never fully recover. We should not forget what our illustrious Prof. S. D. Gross frequently said to his pupils: "Gentlemen, the eye is a part of the human body, and subject to the same physiological laws." When the body is weak and needs rest, the eyes must of necessity be in equal need of rest, and too great stress cannot be placed upon the care of the eyes during convalescence. If by this article I have been able to impress this one fact upon the readers of the ANNALS my purpose shall have been accomplished.

Health by Exercise.

BY ONE OF OUR SUBSCRIBERS.

It may be a question in some minds whether regular, systematic exercises of calisthenics and chest expansion by breathing will prevent spine curvature, stoop-shoulders, and, worst of all, narrow-chestedness. The purpose of this unsolicited article is merely to give a piece of personal history, with the one hope, that its perusal may benefit some "Doubting Thomas," and be a blessing. The writer, when ten years of age, gave every evidence of early consumption, stooped shoulders and narrow chest. A physician said to the mother of the author that unless systematic exercises were used and braces applied, early consumption was certain to appear. Exercises were begun, but no further braces than pure air were needed. From a delicate frame and a narrow chest and stooping shoulders the author has grown to manhood, with square shoulders, upright carriage, and a full bust measure of 41 inches, with expansion to 44½ inches under full inspiration, tipping the scales at 185 pounds; and, beyond a shadow of doubt, this has been done by careful, prolonged exercise and proper breathing. The writer has been engaged, till five years ago, in public school teaching, and has had the privilege of seeing others similarly benefited. Reader, are you a teacher; do your pupils become listless, unteachable and annoy you? Throw open the windows, taking a few moments in exercise, breathe in the fresh spring air. It cures the headache like magic. It causes the blood to go coursing through you and your pupils. It brings color to your cheeks. It causes your eyes to sparkle, and you are soon

all busy, breathing fresh air, drawn through the nostrils, of course—makes all things new; try it and be convinced—health by exercise; that's it. It sounds new, perhaps, to some, but our forefathers found it true and, I fear, put their knowledge to a far better and fuller test than we do. There may be diseases that exercise will not cure, but he who exercises properly will have less need for medicine than he who does not.

A young man, a bookkeeper by profession, became melancholy, spent restless, sleepless nights; he was doing too much work and taking little or no exercise. Medicine did him little good. He began exercising; he went out evenings and talked with "Dame Nature;" he abandoned business thoughts and lost himself in pleasant reveries; he stopped frequently and took prolonged breathings; then he walked on—he turned this way or that without knowing why; he had no objective point in view; he merely walked and thought light thoughts, or ceased to think at all. He returned home, retired and slept—a new experience to him. He repeated this the next night and again he slept, and has been doing so for weeks; he thinks he has found the cure-all. Young man, have I described your case? Business man, are you a similar victim? Try the prescription herein given, and if you do not work better and rest better you had better change your business; for when exercise such as I have set forth herein fails, remember no doctor can cure you, and yours is indeed a hopeless case.

Antiseptic Dentistry.

BY WILLIAM H. SHIPPS, M.D.,

Of Bordentown, N. J.

MUCH has been said and written of late upon the subject of strict antiseptic methods in surgical practice, and rules more or less intricate are laid down, which, if faithfully adhered to by the surgeon, promise immunity to the patient from those untoward influences known to interfere with the reparative process. Most surgeons unhesitatingly agree that a wound, whether the result of traumatism, or inflicted by the surgeon for the relief of existing abnormal conditions, should be placed in such a position as most readily favors prompt healing, although it must be admitted that much diversity exists as to the precise methods to be employed.

With all that has been written upon the subject, is it not a matter of surprise that comparatively little attention is paid to antiseptic methods as applied to surgical dentistry? In my own experience, I find that, as a rule, no special pains are taken to render aseptic the various operations the dentist is daily called upon to perform upon the mouth of his patient. It is true the surgical instruments may undergo frequent cleansing, but rarely does one see a dentist use the

precautions generally employed by the surgeon before beginning an operation. Where one dentist carries out the details adopted by the surgeon to render aseptic the hands and instruments of the operator, nine others are satisfied by the use of the most primitive methods of cleanliness.

The necessity for employment of strict antiseptic precautions becomes apparent when we consider the various conditions met with by the practitioner of dentistry. Not only do patients present themselves in order to be relieved of some offending molar, or for the restoration of teeth not hopelessly lost, but with a multiplicity of affections of the mouth, throat and gums, ranging from the most benign to the most loathsome forms of disease. Where due regard is not paid to perfect cleanliness, it can readily be seen with what readiness disease may be transferred from patient to patient, either through the hands of the operator or the numerous instruments and appliances used in the different operations about the mouth.

I was forcibly reminded of this a day or so ago, when a gentleman from an adjacent town called at my office for treatment. Among other symptoms he called my attention to the condition of his mouth, saying that he was much distressed by the presence of numerous ulcers upon the throat, gums and cheeks. Examination revealed the presence of ulceration, in a marked degree, sufficient in extent to account for the acute distress complained of. Before leaving, he incidentally remarked that on his way home he intended keeping an engagement with his dentist, in order that one or two teeth, in which decay was suspected, might be filled. I at once informed him that in his present condition such a course would be most reprehensible, owing to the danger of conveying the disease to someone else, especially if his dentist did not use the utmost care to guard against transferring the disease.

Being a gentleman of intelligence and common sense, he saw the force of the reasoning, and promised to forego all dental treatment until he was pronounced free from danger. I merely mention this case as one of many that could be cited, showing how, through ignorance or carelessness, patients will enter a dentist's office, wholly indifferent as to the consequences likely to ensue to the unfortunate victim who sits in the ante-room, anxiously awaiting the signal to take his place in the chair just vacated.

A dentist should never extract a tooth, or perform any operation about the mouth, without first rendering aseptic his hands and all appliances to be used upon his patient. Who does less than this fails in his duty, and subjects himself and patient to risks, for which there is not the shadow of excuse.

A Good Suggestion.

"One who hath suffered" gives a hint in the *London Times* which should be remembered by those who have the training of nurses. It is that nurses should be taught that harm is often done when they are attending ladies by telling them dreadful stories of their former patients.

Children of Insane Heritage.

BY HARRIET BROOKE SMITH, M.D.,

(Formerly Resident Physician to Females in Insane Department, Philadelphia Hospital.)

OF the many children born with a heritage of insanity—surely a most unwelcome one, and, too, one as often found among the rich as the poor—some are imbecile or idiotic from birth ; others, a large class, inherit only a tendency toward insanity, which may remain latent throughout life under favorable circumstances. Often, however, this tendency suddenly develops into evident mental disease when some special strain is thrown upon the individual in after-life. This heritage, coming from the mother's side, is popularly supposed to exert more of its evil influence upon the daughters of the family ; while coming from the father, on the other hand, the male children are regarded as most exposed. This rule, while perhaps not being entirely without truth, has certainly only a very general application, to which there must be many exceptions. The liability to the transmission of mental faultiness, coming from either side of the house, is, however, undeniably increased by an associated tendency to drunkenness, especially if this association be in the parent transmitting the mental fault. It has been stated by a gentleman for many years superintendent of a large institution for the benefit of feeble-minded children, that about three-fourths of the little unfortunates who come there are the offspring of parents addicted to the excessive use of alcoholic liquors. This experience would probably apply as well to a very large proportion of the patients in insane asylums ; there is often a history of insanity or of drunkenness, or of both, in the patient's family if that history is honestly elicited.

Beginning the discussion of the matter in hand with the manner of prevention of the insane temperament, as it may be not improperly termed, the expectant mother first claims attention, doubly so where the insanity is supposed to originate in her branch of the family from the danger of the onset of true mental disease in her own person in the periods of pregnancy, parturition or lactation. A grave responsibility from the first rests upon her, and her every act should be regarded as to its possible consequences upon the life so bound up in her own. All these instructions usually laid down for the guidance of the pregnant woman should be most strictly carried out, and every care taken of her own physical and psychical well-being if she desires to reduce to a minimum that danger that so threateningly lowers over her child's future. In the first place, she should endeavor by all means in her power to promote her bodily health. Exercise in the open air, when feasible, or an equivalent in-doors in inclement weather, properly regulated to produce a healthy fatigue and no more, is the first requisite to a proper mode of life in every woman. Exhaustion and its opposite, lack of activity, both conduce the same end—a flabby and relaxed general condition, a want of bodily tone. Such an individual possesses but the slightest power of reaction to the active causes of disease ; and in every such instance brought before the physician's attention, the old saw, *mens sana in*

corpore sano, suggests itself from its utter negation. Food demands its usual large share of attention. Of a necessity its qualities for such a patient are, a high nutritive value, variety and simplicity. Pastry, sweetmeats, spices and wines are to be regarded with suspicion and sparingly indulged in. Occasionally, however, wines or malt liquors find a valued field in pregnancy, but their use should be regulated by the physician's advice. A tendency toward constipation necessitates a laxative diet, perhaps a mild medicament and the accustoming of the bowel to a regular hour for its daily evacuation. Many women find themselves more inclined to drowsiness during pregnancy than at other times: and plenty of sleep becomes a matter of absolute need. During this period of the woman's life it is not well to disregard this call of nature for increased rest, and the reaction for good upon both mother and child of such extra chances for recuperation amply repays the loss of time occasioned.

Cheerfulness, above all, should distinguish the patient's mentalities. On no account should she allow the mental depression, so often accompanying the continued attacks of nausea, to settle down upon her; and every effort must be made to scatter the "blues" to the winds. Out-door life and the society of congenial but not overly-sympathetic friends are excellent aids. The music of a pleasant opera or the mild excitement of a standard play are legitimate medicines for the gloomy feelings that so weigh her spirits; but the sensational dramas should be avoided as the sources of undue excitement. All work that induces nervousness must be given over for the time. Many a woman has brought a disastrous result upon her child from persistently sitting over some intricate needlework until almost in a frenzy of nervousness from the strain, yet determined to finish it in a given time. In general, brooding over any existing or possible malconditions, of whatever nature, is to be strenuously avoided, and those things only which naturally tend toward cheeriness to be invited.

After the child's birth the usual rules for its physical well-being must be regarded, and vigorous hygiene be studied and practiced. All the functions of the body must be closely watched and carefully regulated. For an infant, as a rule, the most newly vegetative life is the best, and sleep should be encouraged. It is during sleep that the strength and vitality of the brain cells are most surely re-enforced. Precocity in early childhood should not be encouraged, and in every child with neurotic parentage the alphabet and long nursery rhymes should invariably be relegated to future years. Such tasks are greater strains upon the infantile intellect than proud parents and nurses can well realize, and it often happens that a child who, with his baby prattles, swells his fond mother's heart with pride by a capacity for remembering and repeating verses and verses of rhyme, and by performing other mental feats which are believed by the parents to give promise of wonderful intellectual ability for the future, proves as the years go by to be but a very ordinary individual after all. In fact, many of these precocious infants seem, as they grow older and are found in the school or still later in actual strife, to fall below the average, and to be finally distanced by those whose minds have unfolded more slowly but more healthfully and, perhaps, completely.

If sturdy, healthy children should be kept out-doors as much as possible, it is certainly eminently more necessary for these children, with an inborn insane tendency, to derive all the benefit that fresh air may bring them ; it gives them a purer blood with which to nourish their developing brains, as well as stronger bodies with which to withstand the wear and tear of after-life. Education in itself acts toward the mental faculties much as does physical exercise to the bodily activities ; but its application to these children is, for apparent reasons, a most delicate question. Some children, of course, demand its influences more than others ; and, again, not a few of these ill-balanced children are dangerously susceptible to its agencies. But in no case is it proper to urge these children in the pursuit of knowledge until the later period of childhood has been fully reached. Of course, a kindergarten school, where the restrictions of school life are reduced to a minimum, or even converted into play, often stands in value as a parental aid ; but, in general, these neurotic children are best kept from the routine work and rivalry of the ordinary day-school until at least eight years or after. Then, too, the care in regulating their tasks and in the encouraging or restricting of their energies marks the ability of the teacher. Although much can be accomplished by education for these unevenly developed intellects to gain for them a comparative balance, there can be no positive immunity in later years from mental disease ; however, the evidence of well-applied efforts in this direction shows such marked advance that it can be scarcely less than criminal to subject these little unfortunates to the old system of driving the willing mind to its ruin, and the unable mind to exhaustion.

Of children of the insane heritage there are at least three well-marked types. First, there are those whose large eyes, thoughtful countenance, with its full, high forehead, mark a most highly-strung, sensitive nature. Apt in childhood to be precocious, grave beyond his years, old-fashioned, such a child demands the most thoughtful care of parent and teacher. In this class a genius is apt to be frequently met ; for talents so developed in a single channel as to overbalance the mental foundation must constitute that often brilliant condition known as genius. Other less excellent qualities of mind, if equally overdeveloped, fall into the category of eccentricities or absolute insanity. Between these extremes, the overdevelopment of natural tendencies of a lofty or low nature and the under-development of the rest of the mental organization, must lie the true path of proper education. These are the children who should be exempt from whippings ; their wills yield to force only when broken, and other and gentler means should teach the necessary precept. It usually means years of patient, gentle, yet firm, training to bring the proper self-control to these uneven dispositions. Ungovernable outbursts of passion should spend their fury upon themselves, and correction follow afterward when mental calm has returned. Nothing can be healthier for such of those who are prone to become childish book-worms than to occasionally withdraw them entirely from their studies and promote a taste for out-door sports. In later life, when the effects of such guarding show alongside of the similar disposition that has been permitted to grow weak, the parents cannot but be repaid for the trials of years by the far greater resistive

power their child's mind has gained, and by the evident stability that has grown apace with the years.

A second type of these children is marked by the child with narrow, low forehead, and small and deeply-set eyes that gleam with cunning. These are those who occasion their parents untold anxiety from the cradle to the grave. The difference between these and ordinary children is as marked as in the last instance, but along a totally variant line. The former were only old-fashioned, visionary, high-strung and precocious; these are unusually mischievous and naughty. In some an evident lack of appreciation of right and wrong at once indicates their terrible danger; and taken early in life, guarded from temptation until virtue must perforce have become habitual, their future is not without promise. Others, however, in full knowledge of the evilness of their actions, are spurred on by a true spirit of devilishness. These are they upon whom the sparing of the rod must be the ruin of the child. Destructive, cruel to dumb animals and younger children, in them every childish vice is developed to an excessive degree. Such a child will prefer to tell an untruth where another could not see the least motive for a lie. There is not often any real lack of mental ability, and, frequently, these very children grow into highly-talented men and women, if guided and controlled aright. But cunning is a trait which they develop early, and often, when first evinced in some smart evasion of punishment or shrewd method of securing the gratification of a desire, is a source of amusement to the parents, who do not realize what the little tricks may portend for them later on. In speaking above, of punishment withheld, of course there are ways and ways of punishing with the rod. A child without knowledge of right or wrong must have some standard of judgment established, and this is best done in quiet and in kindness. But a child with perverse nature must have that nature overruled, and the knowledge of certain chastisement, as a consequence of an act of perversity, will go a long way toward establishing the parental government, if there be associated the knowledge of an equal kindness for every act of self-control. Above all things, no punishment should be done in anger or until the child has had a chance for reflection and possible reparation; but firmness must never be removed, and every unatoned deed of depravity must be followed by its just measure of pain. About this one group of children must be centered the most earnest thought; they really are in desperate lines. Starting with such childish tricks and meannesses, boyhood only finds all the faults intensified. A coward before his superiors in open antagonism, he terrorizes those who are weaker or are helpless to retaliate. This is the type of boy who stoops to steal the pennies from his sister's saving-box or robs his mother's purse and runs away from home. Not infrequently one hears of such boys found guilty of arson, a crime committed simply for the gratification of a mean desire. The unguarded one of this class, grown to manhood, is probably a forger, a bigamist and a common criminal, saved possibly from the scaffold by the recognition of his moral insanity. Too much cannot be urged upon the caretakers of children who are threatened with such futures, to exert their every influence to avert the calamity by thoroughly breaking

down, at the very first, this undue propensity for mischief. Not infrequently these children seem to have naturally unchaste tendencies, and should not be permitted to mingle with other children, except under the supervision of an older person, for fear of contamination of the pure. It will be a fortunate thing for such a child if in his mother exists that nature that can call forth childish confidence and affection. If exercised earnestly and from the first, it will spare the little scamp many an otherwise necessary punishment. But do what one will, a certain proportion of these children, in whom, perhaps, the bent is too strongly born, will eventually go to the bad—and who shall blame the unfortunate? Or, whom shall any blame? It is one of those sad possibilities, that has only too many examples, that a parent of neurotic temperament, with perhaps a strong insane streak, or eccentricity inherited, but without one unholy thought or unworthy motive, should transmit that mental taint so altered as to constitute a moral degradation in the offspring. In this class the sadnesses brought so many godly parents by their black sheep find their source.

The third class of mental faults transmitted from parent to child is typified by the idiot or simpleton. Here the faculties may or may not be unevenly developed, but the salient feature is the relatively slowed or stunted development. (Members of this group, as well as of the other two, may occasionally occur accidentally, so to speak, in families where no neurotic taint or history of insanity can be learned, and so, on the other hand, children are born of parents who might be expected to transmit unsoundness of mind who, nevertheless, escape without a trace of it.) As a class, of course, the outlook as to future usefulness as men and women is not very engaging; but not a small proportion may, by sufficient encouragement, be brought to such a condition, from which by the aid of determination and perseverance they may attain what many more excellent minds entirely fail from lack of application. These are, in their mildest degree, the blockheads, a class whose later work has ever ranked among the best the world over. These children often strangely fail to learn the earliest lessons and in every way seem stupid, until some unseen and unrecognized crisis is passed, when the dulled intellect is whetted to keenness, and the thin flame leaps into a steady light. Others are less fortunate; their unfolding is not simply slowed; it is totally insufficient. Their light is dim, not because of surrounding conditions, but because that flame is fed from insufficient food. Although frequently of excellent physique, the favor of mental capacity has been withheld, and often the life is a total failure. Upon the features of these children is stamped their fault; their countenances are blank, and the eyes are without expression. The movements are usually slow, and their actions are hesitating or deliberative. Speech is apt to come late, and when it does it is very faulty and often remains imperfect forever. The reason for this is a frequent malformation of the palate, the roof being very high and giving it in cross-section somewhat the shape of an inverted V. An imperfect jaw development and eruption of teeth contribute to the same end later on, an idiot or simpleton rarely being able to show a handsome mouth at any period of life. Removed from animals by the bare attributes of man, they are more remarkable, perhaps,

for their animal tendencies than otherwise. Their dearest quality is undoubtedly affection, and their gravest fault, beyond the lack of the higher faculties, is obstinacy. Among these children, again, the rod avails but little. Unable in the run of cases to avert the end for which punishment is administered, they cannot even appreciate the motive for punishment, and they only grow resentful and more stubborn. What is to be done for these little waifs? The question has often been asked, and formerly as often in vain. Within comparatively recent years a number of institutions have been founded in generous countries, the object of which is to endeavor the solving of this and similar problems; and now, in the light of experience gained from the systematic efforts of these beneficent homes, scarcely a case is to be doomed to absolutely no improvement. The child is a rare one in whom there does not exist some possibility, which, recognized and educated, leads to at least comparative excellence in some one particular. One with but a faint share of general reason may have an ear sensitive to musical notes, and, the technicalities of performance once grasped, a wealth of interest springs from what was only waste before. Or a sweet voice may be cultivated into general appreciation, or possibly some manual performance with tools may lead to a better end. It is, of course, impossible by any means to elevate to any degree the entire mind that is of such low organization, but not uncommonly are such traits developed by careful examination which bear a course of training into a condition of comparatively excellent, one-sided ability. Compared with the vegetative, aimless lives of idiots still lingering about our public institutions or the burdens of able families, wandering about with dazed expression, careless appearance, gaping mouth and dribbling lips, the condition of eight-tenths of the simpletons educated in the present methods, stands out in as strong relief as does the educated gentleman from the average black of slavery days.

These three classes, clearly enough separated in their pronounced types, of course, may verge almost into one another or into the average ordinary child of good birth; but the careful observer, with the presence of possible taint in mind, will easily recognize the members of each group, and then whether any or no benefit accrue from following the outline drawn in this paper will, of course, depend largely upon the earnestness and ability of the interested reader.

Before closing, a few more children must receive at least a passing mention. These are those upon whom the neurotic taint has not settled upon the mind, but upon the body. Many are afflicted with asthmas, with St. Vitus' dance, or with epilepsy or some manifestation of inherited nervous fault. They are, mentally, often very bright, but occasionally, as the disease progresses, they become affected later in mind as well as in body, and, as a closing scene, may end their days in as deep a mental darkness as the veriest idiot.

Good News for the Children.

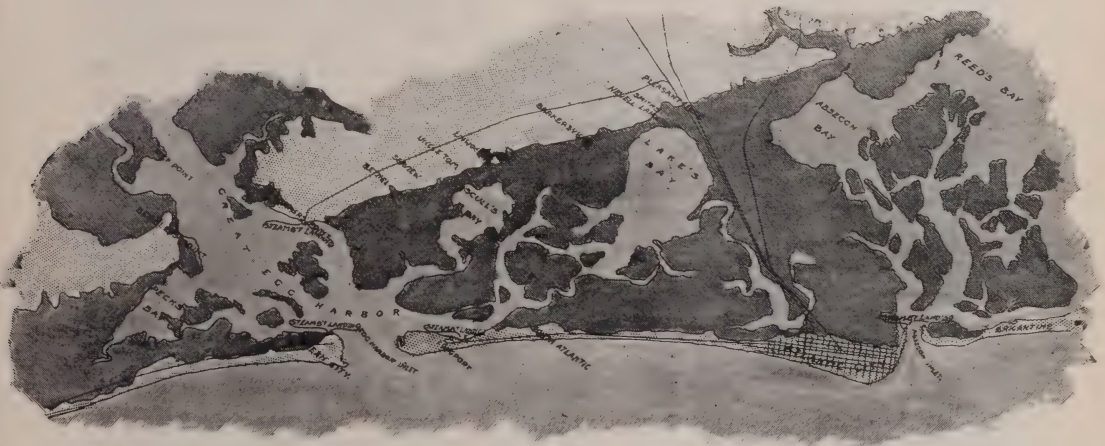
Owing to the increasing and constant warfare by the National Confectioners' Association, there has been a very marked decline in the number of instances of untoward effects from candy eating.

Atlantic City, N. J., as a Health Resort.

BY THE EDITOR.

As the result of personal experience, we have come to feel that, even widely as it is known, the merits of Atlantic City, N. J., as a health resort, are not yet sufficiently appreciated. Year by year the number of those who visit this sea-side city is rapidly increasing, but we have felt that even wider publicity should be given to the health-giving natural and artificial advantages of this sea-side resort.

We are all familiar with the great advantages to health of a sea voyage; a residence at Atlantic City really gives one all the benefits without any of the drawbacks of a sea voyage. Located as it is, Atlantic City is practically a large ship at sea; on the front is the Atlantic Ocean, at either end large "inlets" of salt water; and behind, separated from the mainland by five miles of



Atlantic City, N. J., and Surroundings.

meadows, interspersed by ponds and lakes and streams of salt water, one can feel, with but a little stretch of imagination, that he is really out at sea. Yet, the greatest drawback to a sea voyage, the "sea-sickness," that is so horrible as to be beyond description; the sense of danger always entertained by one who is trusting himself to the mercies of the sea; the necessity that compels the consumption of, more or less, stale food; the monotony of surroundings and the comparatively limited facilities for exercise—all these that might be considered as drawbacks to a sea voyage do not exist at Atlantic City.

It has seemed to our fancy that we might liken Atlantic City to a huge ship that has been securely anchored out in the ocean, and our fancy will be carried out by an inspection of the map here presented.

Nature has, undoubtedly, endowed this island with some wonderful gifts, and it might readily be conceived that such a spot might have been the birth-

place of the goddess "Hygeia." We would like to say even more than we will say about the healthfulness of this city, but we fear lest our motive might be misconstrued and we might be accused of undue partiality. We must, however, say that it is our honest conviction that for one who is seeking restoration to health there is no locality that equals Atlantic City.

As we have already intimated, Nature has done much, and her efforts have been ably supplemented by the intelligently directed artificial efforts of the energetic citizens of the place. Recognizing the peculiar natural endowments of the place, the citizens became alive to its possibilities as a health resort and set to work to do all that art could do to bring about this realization. Recognizing four main, elemental

foundation-stones of health in *pure air, good drainage, good water and good food*, and nature having supplied the first, man set to work to furnish the three last. It can now be safely and truly said that Atlantic City has an admirable system of sewerage; pure, clear, healthy and agreeable water; and its food supply, drawn from the Philadelphia markets, cannot and could not be any better in any city of the land. This latter point is, to our way of thinking, a most vital one. To the invalid, to one who is "run down," there is absolutely nothing so vitally important as good food. It is simply impossible for one to build up his health unless he can procure good



food. We have always thought that the difficulty of procuring good beef there was one point against Florida as a health resort; but we know, by personal experience, that no better beef or poultry or fresher vegetables can be found anywhere than those which can be bought in the stores of Atlantic City. Drug stores and doctors are essential to the invalid, but equally so are the butcher and grocer, and all four of these can be found in the highest state of development on this "land-ship, anchored at sea." But the essentials of air, water, drainage and food, while necessities of a health-resort, are not all-sufficient; the invalid must be amused. Mental occupation and entertainment are extremely important factors in the restoration of health. If there is a locality where a greater diversity of amusement is offered to the visitor, we have yet to hear of the place. In the facilities offered for amusement, Atlantic City reminds one greatly

of a continental city. Everything is life and gayety ; yet, at the same time, one can have all the quiet and seclusion that his particular case may call for.

From the "merry-go-round" the strains of music floating out to the passer-by tempt him into a scene that he will witness no place outside of Atlantic City. Men, women and children are enjoying this whirligig at all hours of the day, and it is truly a sight worth many miles of travel to witness. Not one, but three of these "merry-go-rounds" are at all times well patronized.

Then one feels like a walk, and he has offered to him a stretch of board-walk five miles long, with an uninterrupted view of the ocean, during his promenade, on which he will meet "all the world and his wife," and his sisters and cousins to boot. Truly, if Broadway, in New York, is a thorough-



The Board Walk, Atlantic City, N. J.

fare, the same may be said of the board-walk at Atlantic City. The hotel registers tell us that from all parts of the United States persons are flocking to this health spot, and all who come to Atlantic City will be found, at one time or another, walking on the board-walk. As we walk toward the Inlet, we pass Absecom Lighthouse and the U. S. life-saving station, and if we so wish we can call upon the genial, courtly superintendent of the lighthouse, who always welcomes visitors in the most cordial manner, and who will take great pleasure in showing us through the buildings.

Now we go on a little farther, and we come to one end of this famous board-walk, at a point which might be truly styled the "sportsman's delight." We are at the Inlet, and here we see multitudes of sailboats and rowboats, ready for

hire at a reasonable figure to those who would sail and those who would fish. As we have been walking we have passed two large inclosures, in which, during the summer season, all manner of amusements

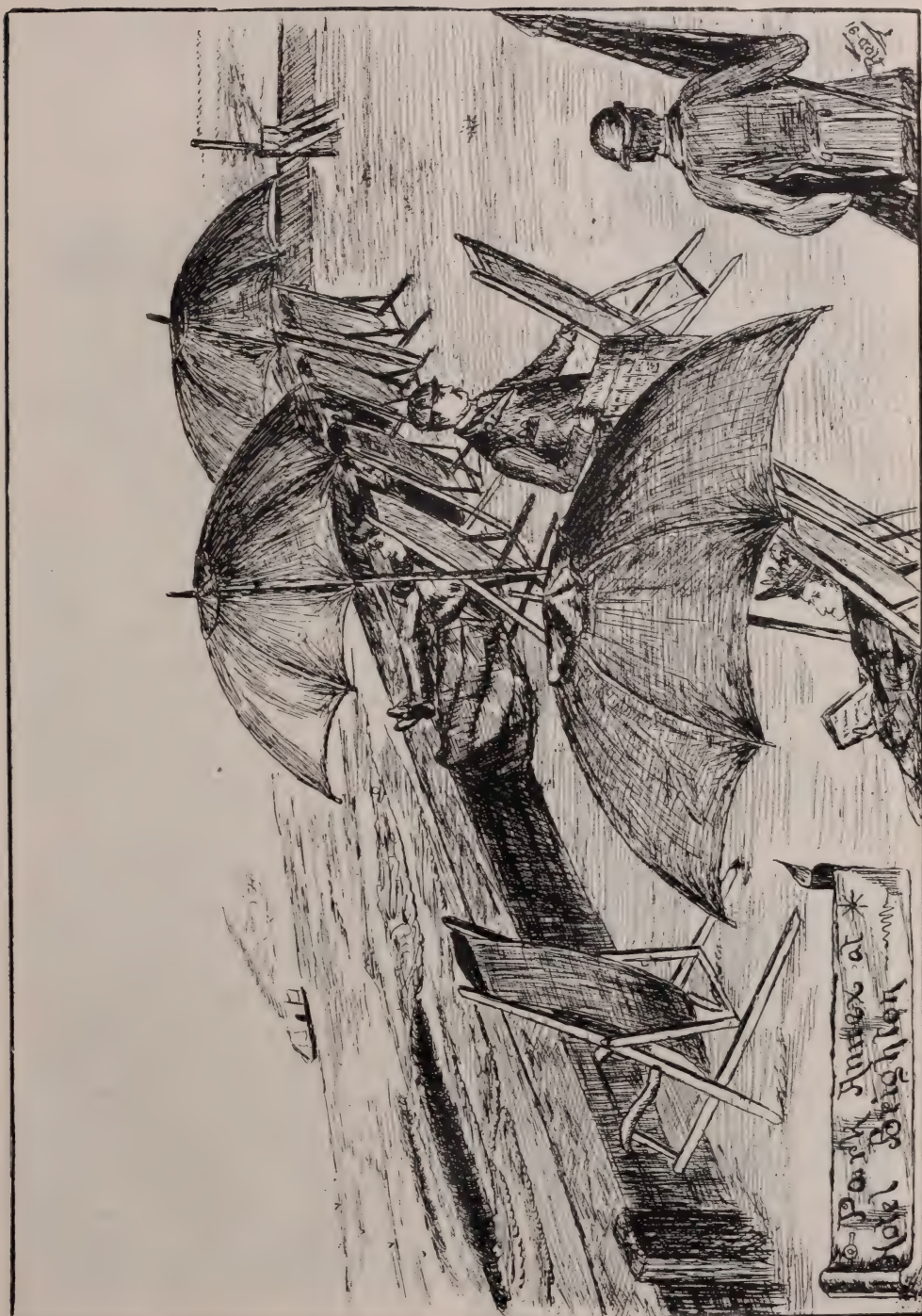
are offered to the visitors. Every time we think of this grand board-walk, extending for five miles along the city front, with the glorious ocean so close, and enveloped, as it is, in an atmosphere of health, we feel that a most appropriate name for it would be

"The Thorough-

fare of Health." We can imagine nothing that would be more beneficial to the overworked, run-down, nervous, dyspeptic, bilious resident of a large city than to go to Atlantic City for one month and daily walk the full length of this



Sailing in the Inlet, Atlantic City, N. J.



board-walk. The result would exceed all possible anticipations. Some might prefer an even more intimate acquaintance with "Old Father Neptune," and, like our friend in the illustration, he will go down to the very edge of the ocean,



"Eating" Tonic Air, Atlantic City, N. J.

and, fairly eating the tonic air, he will drive from his lungs all the cobwebs and the bacilli of Koch, which the foul air of the city has caused to accumulate therein.

We all know that if we take a walk some little time after eating it will materially aid digestion; hence, the visitor, filling his stomach with the good food to which we have referred, and seeking the board-walk for a promenade, converts this good food into good blood, without which good health is an impossibility.

We could say very much more about Atlantic City, but space forbids. As a popular seaside resort it is already the greatest success of any place in this country, and as a health resort it is rapidly becoming favorably known; but it is not as thoroughly appreciated in this respect, we think, as it should be. Without going into details, we would say that first-class hotels, churches of all denominations, first-class schools, stores in which anything and everything can be bought, amusements of all kinds, combine to make a sojourn at Atlantic City an extremely pleasant event. But the point that we would wish to particularly emphasize is that at all seasons of the year Atlantic City is without

doubt an extremely healthy place, and that its very superior claims as a locality where lost health may be regained cannot be overestimated.





During Bathing Hour, Atlantic City, N. J.

Prescription of Exercise.*

BY THOMAS M. BULL, M.D.,

Of New York.

FOR a doctor to tell a patient to "take exercise" is about equivalent to saying "take medicine," and is likely to be followed by about the same results. A patient may injure himself by taking exercise of the wrong kind, quantity or intensity, the same as by taking a wrong drug or dose. The sooner doctors realize that they must be more specific and careful in prescriptions of this character the better. It is also as important to make the exercise pleasant as it is to make medicines palatable; otherwise it will not be taken regularly or with any relish. In order to prescribe exercise with benefit it is necessary to have clearly before our minds what may be accomplished by it. The following seem to be the most common indications for its prescription: (1) To preserve the health of sedentary people; (2) to reduce deformities; (3) to alter weight; (4) to overcome a tendency to hereditary and organic disease.

Every physician is familiar with the long list of ills which are certain, sooner or later, to fasten on those who lead strictly sedentary lives—headache, nervousness, sleeplessness, neuralgias, disorders of the stomach and liver, constipation, hemorrhoids and the thousand and one indefinite ailments which render life miserable both to the patient and physician. All of these can, to a large extent, be prevented, and most of them benefited and cured by exercise properly regulated as to time, amount and accompaniments. Exercise acts here as the great balance-wheel to keep up constant motion in all parts. It will enable the sedentary man to eat and digest more, to sleep better, and to go at his work with a greater vim than any other thing. What the special indications are for each one of these disorders it would probably be useless to try to discover or carry out. But the general rules in prescribing for sedentary men are as follows:

(1) Consider the man and prescribe something which can be carried out. Don't tell a clerk on eight dollars a week to go horseback-riding at two dollars an hour, or try to have a two-hundred-and-fifty-pound man ride a bicycle, because these means are those you enjoy. Don't try to force the inland resident to row, or the one who dwells at the seaside to climb mountains. All are good enough in their places and in proper cases, but as a prescription they are not so likely to be carried out as something more suitable.

(2) Whatever you prescribe to patients, have them begin gradually. The novelty of a thing will be apt to make a man overwork at first, in which case he is sure to be disgusted the next day and not likely to try it again if he thinks he will have the same experience. I have known a piano player so used up by his first few minutes with a pair of Indian clubs that he never touched them again. So always give the caution and tell them that if soreness or stiffness

* From the *New York Medical Journal*.

follows, it will quickly wear away, and soon no amount of exertion will make them sore.

(3) Whenever you prescribe exercise of any kind, be sure you are acquainted with the state of the heart, lungs and arteries of the patient. Also see whether he is ruptured or liable to be. It will certainly increase his respect for you and make him more apt to follow out your prescription if you insist on inquiring into these matters before prescribing. A man liable to apoplexy on excitement, or afflicted with a double aortic murmur, certainly ought not to be in a football rush line, or one with a commencing inguinal hernia in a tug-of-war, and a great deal of the odium which, in the minds of many, rests on athletics, might be avoided if only those liable to trouble were told so before commencing work. Remember that if you prescribe athletics, your prescription cannot be carried out on rainy or very cold or muddy days, or in winter. The advantage which athletic has over gymnasium work is, of course, due to the fact that it is done in the open air, and you can secure the good effect of an occasional contact with mother earth, besides the additional influence of the sun, wind and water. But at least one-half of the time it is impossible to take athletic exercise with pleasure or benefit. So at the same time you give an athletic prescription, instruct your patient to take proper exercise also at home or in a gymnasium, else, if the weather is such as it has been for the last two years, he will be most of the time out of training. Remember that man is a gregarious animal; that exercises which, taken alone, would be very irksome, if performed in a class are very pleasing. It requires more nerve and perseverance than most men possess to take exercise for which they have no particular liking, the same as they would a dose of medicine. But if they see others doing the same things—if a little emulation is excited—and especially if music, marching and other attractions are introduced, that which before was disagreeable soon becomes a positive pleasure. It is for this reason that a well-regulated public gymnasium, if easily accessible, is better than a home gymnasium.

Then, again, be careful to instruct your patients what to do immediately after exercise; they are liable to throw themselves on the ground or stand in draughts while still perspiring, and then blame the exercise for the soreness or bronchitis which they experience. I have been a daily, or at least a tri-weekly, visitor at a gymnasium for six years, and during that time have had but one cold. Let them understand that the motion must not cease until they have had a cool bath and a rub with a coarse towel (or the rub alone), and have their clothes on. I have never seen anyone catch cold from exercise who faithfully carried out these directions.

Health and Wealth.

There recently died in Ohio a banker who, during thirty-six years of married life, paid no less than \$18,000 for medical services, after which there may be pardon for one who raises hands to heaven and gives thanks that he is not as bankers are.

Food Before Sleep.*

BY WILLIAM T. CATHELL, M.D.,
Of Baltimore, Md.

MANY persons, though not actually sick, keep below par in strength and general tone, and I am of the opinion that fasting during the long intervals between supper and breakfast, and especially the complete emptiness of the stomach during sleep, adds greatly to the amount of emaciation, sleeplessness and general weakness we so often meet.

Physiology teaches that in the body there is a perpetual disintegration of tissue, sleeping or waking; it is, therefore, logical to believe that the supply of nourishment should be somewhat continuous, especially in those who are below par, if we would counteract their emaciation and lowered degree of vitality, and, as bodily exercise is suspended during sleep, with wear and tear correspondingly diminished, while digestion, assimilation and nutritive activity continue as usual, the food furnished during this period adds more than is destroyed, and increased weight and improved general vigor are the results.

All beings except man are governed by natural instinct, and every being with a stomach, except man, eats before sleep; and even the human infant, guided by the same instinct, sucks frequently day and night, and if its stomach is empty for any prolonged period, it cries long and loud.

Digestion requires no interval of rest, and if the amount of food during the twenty-four hours is in quantity and quality not beyond the physiological limit, it makes no hurtful difference to the stomach how few or how short are the intervals between eating; but it does make a vast difference in the weak and emaciated one's welfare to have a modicum of food in the stomach during the time of sleep, that instead of being consumed by bodily action it may during the interval improve the lowered system; and I am fully satisfied that were the weakly, the emaciated and the sleepless to rightly take a light lunch or meal of simple, nutritious food before going to bed for a prolonged period, nine in ten of them would be thereby lifted into a better standard of health.

In my specialty (nose and throat) I encounter cases that, in addition to local and constitutional treatment, need an increase of nutritious food; and I find that by directing a bowl of bread and milk, or a mug of beer and a few biscuits, or a saucer of oatmeal and cream, before going to bed, for a few months, a surprising increase in weight, strength and general tone results; on the contrary, persons who are too stout or plethoric should follow an opposite course.

Jouvin's Kid-Glove Cleaner.

Eight and a half fl. ozs. javelle water, $\frac{1}{2}$ fl. oz. water of ammonia, $12\frac{1}{2}$ ozs. powdered castile soap, $9\frac{1}{2}$ fl. ozs. water. This should be allowed to stand until a jelly forms and used with a piece of flannel.

* From the *Maryland Medical Journal*.

Hygiene and Longevity.*

BY THE REV. DR. MILBURN,

Chaplain of the House of Representatives of the United States.

BORN apparently into the lap of consumption.

Blind and sickly at twenty-one.

Weak and feeble at thirty-five.

The picture of health at three-score and ten !

It reads like a patent medicine advertisement, but it is the story of the Rev. Dr. Milburn, the noted blind Chaplain of the House of Representatives. It is a story of the triumph of reason and will over body and disease. It is a story which may give any weak man courage. The blind parson told it in a voice as strong as that of a boy. His gestures were as forcible and easy as those of an athlete, and from time to time he laughed while telling it with an enthusiastic ha! ha! ha! which comes only from perfect lungs, a happy soul, and a good digestion. He smoked as he told it, and he enjoyed his pipe like a veteran tobacco user. Said he :

“For fifteen years I was one of the most fragile of men you can imagine. I had to hold a book at the end of my nose with my hand above to shade the page, and by moving the book continuously along I managed, by seeing one letter at a time, to read and to spell my way through school and college. The result was that when a very young man I found myself afflicted with curvature of the spine, a curvature of the breast-bone and a disease of the heart, and there seemed absolutely no prospect of my ever becoming a healthy man. I was also extremely delicate, and when between nineteen and thirty-five years old, my weight ranged from 107 to 115 pounds. I was working hard, however, all this time, and paying attention to all sorts of things except the laws of health and life. I went to England when 34, and got some hints from there. In those days very little attention was paid to hygiene, and after returning I began to put into practice what I had learned, and ever since that time I have increased in weight and size. I increased my chest measure twelve inches, and my weight from fifty to sixty pounds. My weight increased steadily from the time I was 35, and you will be surprised to know that this was done without my ever going into a gymnasium, or adopting any of the practices which are prescribed for such purposes.

HOW TO BREATHE.

“I can only use the means within the reach of a blind man, and one of the principal means of increasing my size and weight which I adopted was air, taking a larger and larger quantity into the lungs. I have cultivated breathing as the basis of life, so that now I suppose I can inhale and exhale as large a quantity of atmosphere as any living man. That is the secret of the develop-

* From *The Philadelphia Press*.

ment of physique, to take into your lungs the whole amount of air which your lungs are intended to receive, and that is, in the case of a man of fair chest proportion, 330 cubic inches. The well-built men in this country do not take in 200 inches.

"The first thing you do when you awaken in the morning, be sure you have a current of fresh air passing through your room. Remove the heavy bed-clothing from your person, leaving only a sheet over you, lie as nearly flat as you can, draw up the knees and relax the muscles of the abdomen. Then, with your mouth closed, and your chin raised, in order to relieve all constraint about your chest, draw in all the air you can without violence, doing it gradually and without painful effort. Hold the air as long as you can, and breathe it out through the mouth or nose, in the former case with effort. Close your lips as soon as all is out, and practice doing all your inhalations through your nostrils, never, under any circumstances, inhaling through the mouth. I would rather drink the water left in a finger-bowl at the close of a White House dinner than to take in one spoonful of Washington air through my mouth. Do this breathing while in bed in the morning for five or ten minutes. This has been my constant habit for a number of years.

"You will remember the Bible says: 'God breathed into man's nostrils the breath of life, and he became a living soul.' Shakespeare and other famous men speak of the nostrils as the only proper channel to be used in breathing; and it is an uncontradicted fact that the Indian, who never breathed through his mouth, was never subject to thousands of our diseases, until, coming in contact with modern civilization, he was induced to adopt the white man's silly method, and he at once became susceptible to all of those ills of the Caucasian. In the pulpit the very moment I need a supply of air I close the mouth, and the great range and power of my voice I attribute most largely to the development of the lungs through my great breathing capacity.

"A man once conversing with Dr. Taylor said:

"Your friend, Ralph Waldo Emerson, will certainly go to hell."

"Well, I hope he will," replied the doctor, "for he will certainly change the atmosphere as soon as he gets there."

BALDNESS AND THE SUN CURE.

"Air is my first prescription," continued Dr. Milburn, "the sun is my next. I often walk about with my hat off in the sun, and it was a practice of Gœthe to do this for an hour at noon. He said it stimulated his intellect, and that there was a vital and quickening power in the sun's rays. Thirty years ago I began to be bald. My father and younger brother were as bald as the palm of your hand when they were forty, but I told them when they informed me that I was getting bald that I would never be so. I had resolved to prevent it, and I did. I never wear a hat when I can help it, and I am not as barefooted to-day on the top of my head as I was in 1860. I wash my hair whenever I wash my face and hands."

HOW A BLIND MAN EXERCISES.

"I have a muscular exercise, a light dumb-bell exercise," Dr. Milburn went on, "and have often used Indian clubs, and, in addition, have some gymnastic movements for the arms, legs, chest, etc. As to the massage treatment, I suppose I am the most expert massage operator in this country, and am also the best groomed animal in this respect. Immediately after getting out of bed, I take a cold, tepid or warm bath, and rub down vigorously, and I spend from one to two hours every day in grooming my venerable carcass.

"I used to be brought constantly in contact with Henry Ward Beecher and other prominent characters of large physique, thirty years or so ago, and they were always bantering me about my small vitality. 'Why don't you laugh and grow fat?' they would say. 'Well,' I would reply, 'I laugh enough, but don't know how to grow fat.' Since I have changed my plan of life I have buried them all.

"I use horse-hair mats in rubbing down," he continued, "and then put on vaseline or oil and rub into all parts of my body. The oil taken up by the skin in this way is as good as food, and it keeps the cuticle in excellent condition. This use of oil was common among the Greeks and Romans, and you will find it among many savage tribes."

"What about your eating?" I asked.

"Of course," replied Dr. Milburn, "a man must vary his diet according to his habits. If you eat a certain article the year round, it will certainly give you the itch. The diet should conform to the season. The Duke of Montrose once put up itching poles in Scotland for the benefit of the peasantry, and you know Sandy feeds on oatmeal twelve months of the year. The things were a subject of considerable ridicule, but the people appreciated them, and whenever they used them they said as they rubbed: 'God bless the Duke of Montrose.' When I come to eating, I take a cup of hot water and sip it. It should not be drunk. That is the only water I taste during the day, except a glass of water at the beginning of dinner. All the water I drink is boiled. Then come porridge and fruit, the former with milk and sugar; then some brown bread and butter, a little fish and a little bit of chop or steak, and then I wind up with two boiled eggs. I have eaten from two to four boiled eggs every day of the year for thirty years, and when I speak in the evening I always eat two boiled eggs before so doing. For lunch I eat a few biscuits, a little cheese, herring and shavings of dried beef.

"For dinner at six o'clock a simple soup, one course of meat with one or two vegetables, green things in spring, and, above all, onions. I am very strong on onions. I believe it to be the most valuable vegetable that enters the stomach. I take boiled milk before going to bed, which is the last thing, and it enables me to sleep well. My digestion is as perfect as when a boy, and I think that, without a doubt, any man, by adopting the same methods that I did, can achieve the same results."

Our Urban Population.*

MR. ROBERT P. PORTER, Superintendent of the Census, has lately issued a bulletin relating to urban population, prepared under the direction of Mr. William C. Hunt.

In the published records of former censuses, urban population has been defined as that element living in cities, or other closely aggregated bodies of population, containing 8,000 inhabitants or more. This definition of the urban element, although a somewhat arbitrary one, is used in the present discussion of the results of the Eleventh Census in order that they may be compared directly with those of earlier censuses. The proportion of urban population has increased gradually during the past century from 3.35 up to 29.12 per cent., or from one-thirtieth up to nearly one-third of the total population. The increase has been quite regular from the beginning up to 1880, while from 1880 to 1890 it has made a leap from 22.57 up to 29.12 per cent., thus illustrating in a forcible manner the accelerated tendency of our population toward urban life. The number of cities having a population of more than 8,000 increased from six in 1790 to 286 in 1880, whence it has leaped to 443 in 1890.

In 1880 there was but one city, New York, which had a population in excess of a million. In 1890 there were three—New York, Chicago, and Philadelphia.

In 1870 there were but fourteen cities each containing more than 100,000 inhabitants. In 1880 this number had increased to twenty, and in 1890 to twenty-eight.

The rate of growth of some of the cities is surprising. From the 443 cities having over 8,000, we select those that have increased by more than 75 per cent., and they number more than 100. It will be seen that Spokane Falls "takes the cake."

	1890.	1880.	Increase per cent.
Alameda, Cal	11,165	5,708	95.60
Alpena, Mich	11,283	6,153	83.37
Amesbury, Mass	9,798	3,355	192.04
Amsterdam, N. Y	17,336	9,466	83.14
Anderson, Ind.	10,741	4,126	160.32
Anniston, Ala	9,876	942	948.41
Arkansas City, Kans.	8,347	1,012	724.80
Asheville, N. C.	10,235	2,616	291.25
Ashland, Wis.	9,956	. . .	. . .
Ashtabula, Ohio	8,338	4,445	87.58
Atlanta, Ga	65,533	37,409	75.18
Atlantic City, N. J	13,055	5,477	138.36
Battle Creek, Mich.	13,197	7,063	86.85
Bayonne, N. J	19,033	9,372	103.08
Beatrice, Neb	13,836	2,447	465.43
Beaver Falls, Pa.	9,735	5,104	90.73
Binghamton, N. Y	35,005	17,317	102.14
Birmingham, Ala.	26,178	3,086	748.28

* From the *Scientific American*.

Bridgeport, Conn.	48,866	27,643	76.78
Brockton, Mass.	27,294	13,608	100.57
Brunswick, Ga.	8,459	2,891	192.60
Butler, Pa.	8,734	3,163	176.13
Butte, Mont.	10,723	3,363	218.85
Canton, Ohio	26,189	12,258	113.65
Cedar Rapids, Iowa	18,020	10,104	78.35
Chattanooga, Tenn.	29,100	12,892	125.72
Chicago, Ill.	1,099,850	503,185	118.58
Chippewa Falls, Wis.	8,670	3,982	117.73
Cheyenne, Wyo.	11,690	3,456	238.25
Colorado Springs, Colo.	11,140	4,226	163.61
Corning, N. Y.	8,550	4,802	78.05
Dallas, Tex.	38,067	10,358	267.51
Decatur, Ill.	16,841	9,547	76.40
Denison, Tex.	10,958	3,975	175.67
Denver, Colo.	106,713	35,629	199.51
Des Moines, Iowa	50,093	22,408	123.55
Detroit, Mich.	205,876	116,340	76.96
Duluth, Minn.	33,115	3,483	850.76
East Liverpool, Ohio.	10,956	5,568	96.77
East Portland, Ore.	10,532	2,934	258.96
Elgin, Ill.	17,823	8,787	102.83
El Paso, Tex.	10,338	736	1,304.62
Evansville, Ind.	50,756	29,280	73.35
Everett, Mass.	11,068	4,159	166.12
Findlay, Ohio	18,553	4,633	300.45
Fitchburg, Mass.	22,037	12,429	77.30
Fort Scott, Kans.	11,946	5,372	122.38
Fort Smith, Ark.	11,311	3,099	264.99
Fort Worth, Tex.	23,076	6,663	246.33
Fresno, Cal.	10,818	1,112	872.84
Gloversville, N. Y.	13,864	7,133	94.36
Grand Rapids, Mich.	60,278	32,016	88.27
Hastings, Neb.	13,584	2,817	382.22
Hazleton, Pa.	11,872	6,935	71.19
Helena, Mont.	13,834	3,624	281.73
Hot Springs, Ark.	8,086	3,554	127.52
Huntington, W. Va.	10,108	3,174	218.46
Hutchinson, Kans.	8,682	1,540	463.77
Iron Mountain, Mich.	8,599	. . .	. . .
Ishpeming, Mich.	11,197	6,039	85.41
Jackson, Tenn.	10,039	5,377	86.70
Jacksonville, Fla.	17,201	7,650	124.85
Johnstown, Pa.	21,805	8,380	160.20
Joliet, Ill.	23,264	11,657	99.57
Kansas City, Kans.	38,316	3,200	1,097.38
Kansas City, Mo.	132,716	55,785	137.91
Kearney, Neb.	8,074	1,782	353.09
Key West, Fla.	18,080	9,890	82.81
Knoxville, Tenn.	22,535	9,693	132.49
Kokomo, Ind.	8,261	4,042	104.38
La Crosse, Wis.	25,090	14,505	72.97
Laredo, Tex.	11,319	3,521	221.47

Lima, Ohio	15,987	7,567	111.27
Lincoln, Neb.	55,154	13,003	324.16
Little Rock, Ark.	25,874	13,138	96.94
Long Island City, N. Y.	30,506	17,129	78.10
Los Angeles, Cal.	50,395	11,183	350.64
McKeesport, Pa.	20,741	8,212	152.57
Macon, Ga.	22,746	12,749	78.41
Malden, Mass.	23,031	12,017	91.65
Manistee, Mich.	12,812	6,930	84.88
Marinette, Wis.	11,523	2,750	319.02
Marion, Ind.	8,769	3,182	175.58
Marion, Ohio	8,327	3,899	113.57
Marquette, Mich.	9,093	4,690	93.88
Melrose, Mass.	8,519	4,560	86.82
Memphis, Tenn.	64,495	33,592	92.00
Menominee, Mich.	10,630	3,288	223.30
Meridian, Miss.	10,624	4,008	165.07
Milwaukee, Wis.	204,468	115,587	76.90
Minneapolis, Minn.	164,738	46,887	251.35
Mount Carmel, Pa.	8,251	2,378	247.10
Mount Vernon, N. Y.	10,677	4,586	132.82
Muncie, Ind.	11,345	5,219	117.38
Muskegon, Mich.	22,702	11,262	101.58
Nanticoke, Pa.	10,044	3,884	158.60
Nashville, Tenn.	76,168	43,350	75.70
Nebraska City, Neb.	11,494	4,183	174.78
Ogden, Utah.	14,889	6,069	145.33
Omaha, Neb.	140,452	30,518	360.23
Paris, Texas.	8,254	3,980	107.39
Passaic, N. J.	13,028	6,532	99.45
Perth Amboy, N. J.	9,512	4,808	97.84
Pine Bluff, Ark.	9,952	3,203	210.71
Plattsmouth, Neb.	8,392	4,175	101.01
Portland, Ore.	46,385	17,577	163.90
Pottstown, Pa.	13,285	5,305	150.42
Pueblo, Colo.	24,558	3,217	663.38
Rockford, Ill.	23,584	13,129	79.63
St. Paul, Minn.	133,156	41,473	221.07
Salt Lake City, Utah.	44,843	20,768	115.92
San Antonio, Tex.	37,673	20,550	83.32
San Diego, Cal.	16,159	2,637	512.78
Seattle, Wash.	42,837	3,533	1,112.48
Shamokin, Pa.	14,403	8,184	75.99
Sheboygan, Wis.	16,359	7,314	123.67
Sioux City, Iowa.	37,806	7,366	413.25
Sioux Falls, South Dakota	10,177	2,164	370.29
South Bethlehem, Pa.	10,302	4,925	109.18
Spokane Falls, Wash.	19,922	350	5,592.00
Springfield, Mo.	21,850	6,522	235.02
Steelton, Pa.	9,250	2,447	278.01
Streator, Ill.	11,414	5,157	121.33
Tacoma, Wash.	36,006	1,098	3,179.23
Topeka, Kans.	31,007	15,452	100.67
Trenton, N. J.	57,458	29,910	92.10
Union, N. J.	10,643	5,849	81.96
Waco, Texas.	14,445	7,295	98.01
Wausau, Wis.	9,253	4,277	116.34
West Bay City, Mich.	12,981	6,397	102.92
Wichita, Kans.	23,853	4,911	385.71
Winona, Minn.	18,208	10,208	78.37
Winston, N. C.	8,018	2,854	180.94
Youngstown, Ohio.	33,220	15,435	115.23

NOTES AND COMMENTS.

Hair Curling Fluid.

Two ozs. borax, 1 dram gum arabic, $1\frac{1}{2}$ fl. ozs. spirits of camphor, 2 pints water. The hair is to be wet with this mixture on retiring at night and rolled in twists of paper as usual.

His Wife Was a Sanitarian.

A Knoxville business man estimates that he has walked over 1,100 miles in going to and from his meals during the past year. If all wives would offer this same inducement for exercise we would hear much less of dyspeptic, *cranky* and growling husbands.

The Insanitary White House.

The plumbing inspector of Washington has recently made an examination of the White House, and reports that the condition of the plumbing there is very far from being perfect, and recommends a thorough overhauling of the bath-rooms and water-closets.

A Good Use for Old Tin Cans.

To preserve rosebushes, cuttings, or any tender plant just set out from crickets or any winged bugs, cut out the top and bottom of tin cans and place the cylinder over the plants, and keep them there till the plants get strong enough to resist the attacks of bugs.

Break Good News Gently.

A citizen of Augusta, Me., heard that a widow in that town had been left a fortune of \$25,000, and he ran to her house with the news. The good tidings were blurted out in a blunt way, and over she fell in a faint and swallowed four brass pins she was holding in her mouth.

To Make Ivory Ductile.

When ivory is washed in sulphuric acid it becomes quite flexible and may be bent into almost any form. Washing it in water and exposure to the atmosphere will again harden it, but the *Nat. Dr.* states that its flexibility may be restored at any time by immersion in hot water.

Medical Advice.

"I am on my way home, doctor," said a parsimonious city alderman, who was fond of getting advice gratis, meeting a well-known physician in Pall Mall, "and I am thoroughly tired and worn out. What ought I to take?"

"Take a cab," replied the intelligent medico.

Dolls That Can Write.

The greatest novelty in dolls has now been invented in Nuremberg, the great German town for dolls and playthings. A machine in the doll causes it to move its hand, and write neat little letters on a slate or on paper. Whole sentences can be written, to the great amusement of children.

Laughing as a Remedy.

There is more benefit in a good laugh than in all the hot water remedies, faith cures, cold water, electric, and all other new-fangled treatments in the world, and it does not cost anything. Laugh! If you know of nothing else to laugh at, laugh at your neighbor. He is probably improving his health by laughing at you.

The Progress of Hygiene in New Orleans.

We are gratified to learn that the energetic members of the State Board of Health of Louisiana have instituted a system of chemical analysis with which they intend to disclose the presence of deleterious substances in foods and drinks. This is certainly a commendable step towards sanitary reform which we heartily indorse.

The Power of Imagination.

A man who was engaged in felling trees recently, suddenly discovered a big gash in his boot where he had cut his foot and just managed to get home, feeling himself growing fainter from loss of blood all the way and fainted on arriving, when somebody discovered that the gash only went through his boot, and the red color was not blood, but only a woollen stocking.

Storing Food in Inhabited Rooms.

A writer in the *Gazette Médicale de l'Algérie* calls the attention of hygienists to the danger of eating butter impregnated with dangerous miasmata. Frequently the butter is kept in inhabited rooms, and sometimes even in rooms occupied by sick persons. Milk also is often kept in the same manner. The result is a contamination by morbid germs. Care should therefore be taken to obviate these grave risks to the public health.

When Births Occur.

There is no question that in common with deaths, births occur more frequently by night than by day. This question has been often disputed, and was authoritatively decided by Dr. West, who kept a record of 2,019 cases which he attended, with a result that they were found to have taken place as follows :

780	from	11 P.M.	to	7 A.M.
662	"	7 A.M.	"	3 P.M.
578	"	3	"	11 "

The Horse's Strong Stomach.

Nothing on earth will upset a horse's stomach. This is not because the horse does not feel pain, but simply because the horse has no gall-bladder. Has anybody ever seen a horse sick at sea? Has anybody ever known an emetic to have any effect on a horse? At a bull fight a horse may be seen eating, with its entrails trailing on the ground. As for the contention that a horse is not as sensitive to pain as man, it is probable that a horse is a great deal more so. There is no living creature, not even a hysterical woman, so nervously sensitive as a horse.

Hygienic Religion.

The Evangelist—"I grieve deeply to learn that you have left the Episcopal Church and joined the Presbyterian."

Mr. Threescore—"It's a fac', sir. You see, it's like this: Me an' the old woman is 'flicted with rheumatiz. Well, in the 'Piscopal Church it's a continual gittin' up an' settin' down. Our old bones is too achy, yer see. But in the Presbyterian Church it's different. You git up an' thar you *stan'*, er you set down an' thar you *sof*. 'Taint a question uv principle, but uv bones, and yer mustn't have no hard feelin's in the matter."

The Value of Water.

It should be generally known that one of the most important agencies in the digestion and assimilation of food is water, and that seventy-five per cent. of the human body is composed of water, and that four and one-half pounds are thrown off daily by the healthy body, and that a diet largely nitrogenous will tax the system severely, unless a considerable quantity of water be taken for the purpose of getting rid of the waste. It is estimated that a full-grown male adult requires fifty-two fluid ounces of water daily, and organized structure will not perform its function without its due proportion of this agent.

Influence of Food on Physical Character.

Dr. Oliver Wendell Holmes is quoted as offering the following sentiments regarding this topic: Most assuredly I do believe that body and mind are influenced by the kind of food habitually depended upon. I am persuaded that a too exclusively porcine diet gives a bristly character to the beard and hair, which is borrowed from the animal whose tissues these stiff-bearded compatriots of ours have too largely assimilated. I can never stray among the village people of our windy capes, without now and then coming upon a human being who looks as if he had been split, salted and dried, like the fish which has built up his arid organism. If the body is modified by the food which nourishes it, the mind and character very certainly will be modified by it also. We know enough of their close connection to be sure of that, without statistical observations to prove it.

Bad Temper Mostly Involuntary.

Many people consider that "bad temper" is entirely voluntary on the part of the person who displays it. As a matter of fact, it is often to a very great extent involuntary, and no one is more angry at it than the bad-tempered person himself. Of course, everyone, whether he is born with a bad temper or has acquired one from habit, or has been visited with one as the result of disease or injury, should at least try to control it. But his friends should also bear in mind that bad temper may be, and often is, an affliction to be sympathized with, not an offense to be punished.

Ether-Drinking in Ireland.

The statement lately put forth of the prevalence of ether-drinking among certain classes in Ireland, has had confirmation before a British committee. The Rev. Dr. Carter, Rector of Cookstown, gave evidence that ether-drinking was not a rarity, but quite a common practice. Children, even, were given to the habit, obtaining the intoxicant from beggar-women who tramped the country. On market days particularly a great number of people would keep themselves drunk at small expense, taking a given quantity of ether at certain intervals. Some government action will probably be taken at an early date.

Second Childhood.

This is often spoken of as a condition into which those of advanced life enter. The mind, disposition and actions become child-like, until finally the evening of existence becomes no less lightsome and blank to sterner realities than maintained at the dawn of life. However that may be, we have in medicine occasional evidences which, if they do not point to a secondary physical childhood, so to speak, yet are sufficiently interesting to have note. Among these points of interest may be mentioned a case of scarlet fever occurring recently in a woman 59 years of age, and a case of whooping-cough in a man aged 84.

Tea a Cause of Cold Feet.

Mr. Hutchinson says, in the *Archives of Surgery*, that he once advised a lady to drink more tea. "I cannot touch it," was her reply. "It makes my feet icy cold, and wet with cold perspiration." On further inquiry, she assured Mr. Hutchinson that she was quite certain of her facts, and had often tested them. She thought that the perspiration was usually of the soles chiefly. Her hands were, she thought, also made cold, but not so definitely as her feet. Mr. Hutchinson says he had long been familiar with the fact that tea made the feet cold, but did not know that cold perspiration attended it. It does not do so in all persons. The coldness is caused, he believes, by contraction of the arteries, for the feet at the same time shrink. Alcohol has usually a precisely opposite effect.

Fish Poison.

A foreign observer calls attention to a very important matter in connection with the use of fish as a food. It appears that an investigation of the result of eating fish preserved on ice for use in the London markets, has led to the discovery that those were most dangerous which were kept in immediate contact with the ice. Poisoning by fish which had not been in contact with ice was not observed at all. This is attributed to the influence of the water derived from the ice, and bearing whatever impurities it had had before being frozen, which promotes the formation of the animal alkaloids known as fish poison.

A Simple Method of Removing a Needle.

"I think it may be of service to record a simple means by which I obtained the removal of a broken needle from the heel of a young lady, aged twelve (says a writer in the *Brit. Med. Journal*), whom I saw lately walking about on her toes to avoid her right heel, into which a needle had been broken, touching the ground. The buried end could be felt, but any pressure led to its further entry. I directed her to wear a large, thick corn-plaster around the spot, with a little wet cotton-wool in the center, and to tread freely on the heel. Within a week afterwards she showed me the needle, which had protruded, and she had easily withdrawn it. Thus no wound was made, and no scar left to be a tender spot on the surface."

An Ideal Woman.

My ideal woman (says an observant and thoughtful writer) is always graceful and beautiful, better with her hands than her head, but best of all with her heart. She has many admirers, but is constant to one, whom she marries at five-and-twenty. She has at least five children, all healthy and good like herself. She can cook and sew, and dance and sing—she is very likely accomplished and well informed. She is not a bore, because she has never overworked her brain, and is really interested in all she knows. She is a grandmother at sixty, and sings "John Anderson my Jo" at seventy-five. I need hardly say that my pattern woman is religious, but not at all controversial. She cannot argue, but she *lives*.

Tomato Confections.

A very delicious confection may be made of tomatoes. The single or pear-shaped tomato is the best for this purpose. Take six pounds of sugar to one peck of the fruit; scald and remove the skin, sprinkle the sugar over the tomatoes, and let them stand two days in stone jars; then cook them in this juice until the sugar penetrates and they look clear; take them out, spread on dishes, flattening each tomato, and dry in the sun; a small quantity of the syrup should be occasionally sprinkled over them while drying; when dry, pack them down in boxes with powdered sugar between each layer. The syrup is cooked down and bottled for use. When treated in this way the flavor of the dried tomato is much like the best quality of figs.

Studying Disease in Domestic Animals.

The Board of Regents of the University of Nebraska have called Dr. F. S. Billings to take charge of the work of investigating the diseases of domestic animals, and have appropriated over \$10,000 to cover the expenses of the undertaking for the first year. This action was taken at the instance of a committee representing the live-stock interests of the State. Dr. Billings' staff will consist of a chemist and an assistant, the latter to receive a salary of \$1,200, and also a corps of volunteer workers. These volunteers will be assigned to original and practical work, the results of which they will be at liberty to publish, and will receive credit for as their own.

An Instinctive Philanthropist.

Dr. Peabody, of Harvard, who has just entered the ranks of the octogenarians, is a little absent-minded at times. One summer day, having come into Boston from Cambridge, and having alighted from the car at Bowdoin Square, he turned a sharp corner and collided with an elderly gentleman who was standing with his hat off, wiping the perspiration from his forehead, but who held his hat in such a way as to give the appearance of begging. Dr. Peabody seeing the hat, dropped a quarter into it with his customary kind remark. Dr. Oliver Wendell Holmes, who was holding the hat, put the money into his pocket, solemnly thanked his old friend, the giver, and passed on.

Method of Preparing Buttermilk.

As given by ex-Congressman W. L. Scott: "My New Orleans friend, who told me he was eighty-seven years old, and had been using the buttermilk for years, had set out a formula for preparing the milk. You put the buttermilk in a pan, which is set in hot water. The milk is brought to the boiling point, but not allowed to boil. Then the heavy part is skimmed off; the whey which remains is set aside to cool. I drink a glass of it three times a day as hot as I could bear it in my throat. After you get used to it you will like it better than champagne. It has a delicious acid taste. I have been a great sufferer for years with inflammation of the mucous membrane, which caused my dyspepsia, and this is the only thing that has ever permanently helped me."

A Cure for Hawking.

A cure for hawking, due to accumulation of dried mucus in the nose and throat, is, according to the *Omaha Clinic*, the following:

Ammon. muriatis,
Pulv. ext. glycyrrh ãã ʒ ij.
M. F. pulvis.

Of this two teaspoonfuls are taken in a glassful of water on an empty stomach in the morning, every two hours during the day, and the last dose before retiring. This is continued until one single attempt at clearing the throat will cause an easy and loose expectoration, when the frequency of the dose is reduced first to every three, then to every four, and finally five hours.

Novel Treatment of Ingrown Toe-nail.

Dr. Puerckhauer recommends a novel, simple, and at the same time competent treatment for ingrown toe-nail: A 40 per cent. solution of potassa is applied warm to the portion of the nail to be removed. After a few seconds the uppermost layer of the nail will be so soft that it can be scraped off with a piece of sharp-edged glass; the next layer is then moistened with the same solution and scraped off; this must be repeated until the remaining portion is as a thin sheet of paper, when it is seized with a pincette and lifted from the underlying soft parts and severed from the other half. The operation does not require more than half an hour's time, is painless and bloodless, while the patient is delivered from his suffering without being disabled even for an hour.

Census of a Cheese.

Dr. Adametz, a Swiss scholar, has been taking a census of the inhabitants of a cheese. The microscopic examination of one "gramm" of a fresh Emmenthaler cheese, such as is sold in England under the name of Gruyere, contained no fewer than 90,000 so-called microbes. This prodigious encampment, after seventy days, proved to have increased to a tribe of 800,000. Another sort of cheese contained within a single "gramm" board and lodging for about two million microbes, while the "gramm" cut from the rind of the same cheese Dr. Adametz found about five million of these inhabitants. A piece of cheese upon our tables, of a few pounds' weight, may consequently contain more microbe inhabitants than there are human inhabitants in the whole world.

The Doctor's Reverie.

Hark, hark how we doctors laugh,
The bacteria are coming to town.
The bacilli and cocci,
The molds and the fungi
Are poisoning the air all around.

Ho, ho, how the sea winds do blow,
All loaded with rheumatically pains,
With backache and toothache,
With neuralgiac headache
And damp fogs a-chilling the frame.

He, he, the hot sun pleases me;
With its glare come fever and chills,
For the bugs are all "in it,"
They double each minute,
And give a big boom for my pills.

Ha, ha, just hear the rain patter,
As it fills all the cisterns with germs.
There's trouble a-brewing,
There's sickness a-stewing
That'll bring all the folks to my terms.

Hi, hi, that wind suits my eye,

The people will all have the grippe.
They'll be coughing and sneezing,
And dosing and wheezing,
A chance that I'll never let slip.

O'er the plumber and ice man I'll dance a
can-can
And give the hotel man the bounce,
For mine'll be the dollars,
I'll have many callers,
And weigh out quinine by the ounce.

When the weather is wet I never will fret,
For the people are sure to catch cold,
Or, if the weather be dry
I never will cry,
By ague I'll have sick ones enrolled.

Where or whenever, come good or bad
weather,
The climate will always suit me;
The bacilli and cocci,
The molds and the fungi
Will keep me in business I see.

Sanitation in the Great West.

Our esteemed countrymen of Colorado may not be thoroughly and profoundly educated in the science of hygiene or the art of administering sanitary laws, says the *Medical Record*, but they have a crude sense of what is needed in these matters, which is often more effective than a health board ordinance. A telegram from West Denver announces that the police were summoned hastily to that place, on May 2, where a mob was in the act of lynching a Chinaman named Wing Lee. The neighborhood has been unhealthy lately, and an examination was made of the cellars occupied by several Celestials. The filth and stench were frightful, which so enraged the people that they procured a rope and would have hanged this particular Chinaman had not the police patrol wagon put in a timely appearance on the scene.

Baby Learning to Walk.

People sometimes ask at what age can we seat a child in a chair; when put him on his legs; how old must he be before we teach him to walk? The answers are easy, says the *Popular Science Monthly*. He must not be made to sit till he has spontaneously sat up in his bed and has been able to hold his seat. This sometimes happens in the sixth or seventh month, sometimes later. The sitting position is not without danger, even when he takes it himself. Imposed prematurely upon him, it tires the backbone, and may interfere with the growth; so the child should never be taught to stand or to walk. That is his affair, not ours. Place him on a carpet in a healthy room or in the open air, and let him play in freedom, roll, try to go ahead on his hands and feet, or go backward, which he will do more successively at first; it all gradually strengthens and hardens him. Some day he will manage to get upon his knees, another day to go forward upon them, and then to raise himself up against the chairs. He thus learns to do all he can as fast as he can, and no more.

Private Rights and Inspection.

There is scarcely a movement inaugurated in the interest of the public welfare but that there is opposition, urged on the grounds of its invasion of "private rights," says the *Sanitary News*. Such opposition generally comes from those who have no idea of what private rights consist, and who are not conscious of any duty to furnish their individual shares to the welfare of the general public. Whatever exists of private rights in this country must be found in such individual immunities as do not conflict with the public good or retard general progress. Inspection, in a sanitary sense, means the procurement of intelligent information of existing conditions, in order that proper measures may be employed in providing for the public safety. Sanitary inspectors are selected with regard to their proficiency in matters with which they have to do, and of which the public may be considered ignorant. Conceding for the present that a man has the right to place cheap skin plumbing in his house, and with polluted water and contaminated air poison his family, no one will claim that he has the right to endanger the health and life of his neighbors.

Notification of Infectious Diseases.

The *Lancet*, commenting on the passage of the English infectious disease notification bill, says: "One thing is remarkable in this legislation—the slight resistance which politicians of advanced views have been able to offer to its fundamental principle, viz., the right of the community to insist on knowing the affairs of individuals and families where these are likely to involve in any degree the health of others; in other words, the subordination of the individual to the community. This is, of course, the fundamental principle of society, but it is ever undergoing fresh development. National education, vaccination, isolation and notification of disease, are all illustrations of the same principle. We have ourselves no hesitation in accepting the principle that individual liberty must give way where such doubtful advantages as the freedom to have smallpox and scarlet fever are the only badges of liberty; and it will involve no misfortune to the world if many other rights claimed by well-meaning but discordant individuals are curtailed in the interests of society."

Insomnia in Infants.

Dr. Jules Simon considers insomnia a symptom of much importance in infants. In many diseases it is a symptom of minor importance, and of no special interest. In others it is one of the chief manifestations of the disease. The influence of dentition has been greatly exaggerated. Unless congestion of the gums or surrounding parts is present, it causes but little disturbance of the sleep. Dyspepsia and indigestion are the most common and universal causes of disturbed sleep, even without the definite symptoms of vomiting, diarrhoea, or marked constipation. A discussion of the treatment would involve a review of the whole subject of dietetics. Causes referable to the nervous system probably occur next in frequency. All young infants may, even in the first year, present evidences of acute cerebral congestion. Extremes of either cold or heat may produce the same result. A child that has been exposed to a strong wind during its daily airing, or one that has had insufficient protection from the sun, may pass a restless and uncomfortable night. This condition must be distinguished from the insomnia of meningitis, which, in some cases, is for many days the only sign. In older children, headache due to overtaking of the brain is not uncommon. Anæmia and rapid growth, in conjunction with overstudy, is a fruitful cause of insomnia. In children of rheumatic parents this tendency is especially marked. Among nervous causes in these older children, hysteria, chorea, and epilepsy are the most common. The young hysterical subject is always liable to insomnia, with or without headache. Some attribute all headaches of this period to hysteria, but the author believes that the distinction should be carefully made between such headaches and those due simply to rapid growth and over-study. The insomnia of epilepsy is peculiar to itself, and is sometimes the only symptom for a considerable period. The child suddenly wakes from profound sleep, sits up, and begins to cry, but soon lies back, as if exhausted, and falls into a deep sleep. These attacks are always accompanied by incontinence of urine.

A Model Nurse.

A lady who was very particular about the habits and morals of her children engaged a nurse who came to her highly recommended. The girl proved a perfect success. The children, who were noisy little ones, became quiet and obedient, and their mother marveled at the change.

One day she noticed them tip-toeing about the house, and calling the eldest one to her, she asked her why they walked in that manner.

"Nellie told us to, so we won't make any noise."

"But how is it you remember so well what Nellie tells you?"

"We're 'fraid of the trap-doors," lisped a younger child.

"Hush, Sissy! She said we wasn't to tell."

"Trap-doors!" exclaimed the mother, curious to know; "what did Nellie mean?"

The child being commanded by her mother reluctantly told:

"She said there was lots and lots of trap-doors—that she made them herself, an' if we run and jumped we'd fall through into a great, deep dungeon, and nobody wouldn't never find us again."

"So," said the mother, "this is Nellie's method of keeping you quiet? How did she get you to sleep at night?"

"Bears," panted the younger one; "big bears that are under the bed, and will come out an' eat us all up if we don't go to sleep."

"That will do," said the mother, as she went out to dismiss the imaginative Nellie. She is now trying to teach the children enough natural history to prove that bears do not live under beds, also that the trap-doors were only naughty make-believes, designed by the cunning Nellie.

State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania.

PRESIDENT,

GEORGE G. GROFF, M.D., of Lewisburg.

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HOWARD MURPHY, C.E., of Philadelphia.

BENJAMIN LEE, M.D., of Philadelphia.

PLACE OF MEETING,

Supreme Court Room, State Capitol, Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Thursday in May, July and November.

THE
ANNALS
OF
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COMMUNICATIONS.

Annual Address Before the State Board of Health of Pennsylvania.*

BY SAMUEL G. DIXON, M.D.,
Professor of Hygiene in the University of Pennsylvania.

GENTLEMEN: Before entering upon the important topics which I propose to discuss before you this evening, I will take the first opportunity that presents itself of expressing the great pleasure and honor which I experience in having been requested to deliver the address before a body of gentlemen whose high function it is to act as the guardians of the health of the people of this great State, and to keep a vigilant eye upon all measures, which, whether local or general in their application, are calculated in your judgment either favorably or adversely, to affect the public health.

It is difficult, gentlemen, to overrate the importance of your mission, and it is a matter for congratulation that the age in which we live is far and away in advance in its recognition of the importance of hygiene as a public question than were the days in the earlier periods of our history.

Facts which were then ignored or scoffed at are now generally admitted, even if not fully realized and acted on; and the era of ignorance and unbelief, which was followed by that of speculation—times, no doubt, exceedingly trying to your predecessors intrusted with the execution of sanitary improvement and maintenance of proper precautions—has passed away.

And yet much remains in the way of public enlightenment before you can be expected to accomplish the full measure of your calling, or receive that general and cordial co-operation, without which your hands are tied and your work hampered.

Public sanitation can only be accomplished by a public body representing the State; individual effort, however much directed by zeal, may be altogether without knowledge; and thus a single ignoramus may cultivate enough propagating germs of disease to infect a whole town or district, and so frustrate the good work of a representative board.

* Read May 15, 1891, at the Sanitary Convention at Altoona.

Therefore, it is upon a Board of Health, such as I see before me this evening, in a great measure depends the health of the people ; but, at the same time, the best efforts you may make are doomed to failure, unless you receive those plenary powers which will enable you to carry out your plans.

And it is important to remember that while curative medicine is still but an art, which has progressed but little during the last fifty years, preventive medicine or sanitary knowledge has advanced to the dignity of a science, which may be destined within a few years to monopolize the attention of the medical profession, to the partial exclusion of the old-fashioned methods in which we have been reared.

The accession or increase to our knowledge as to the origin and growth of disease during the last ten years has been very great, and particularly is this the case respecting the recent researches into tuberculosis, thereby throwing upon us a greater degree of responsibility in using all means at our command to prevent and minimize the spread of this fell disease.

If we should sit still and permit the enemy to plant his guns right within our midst, it follows as a matter of course that we are beaten before the battle begins ; and so if our citizens refuse to fall into the ranks, shoulder their muskets, and volunteer their aid under the orders of their superior officers, is it reasonable to hold the latter responsible for the killed and wounded ? Certainly not. We may preach and counsel and exhort, and more than that, prove what we teach, until we are tired ; but unless we can obtain the zealous and intelligent co-operation of our fellow-citizens, we might as well talk to the moon.

A few weeks ago a wave of excitement swept over the land at the possibility of a rupture in our peaceful relations with Italy ; and it looked at one time as if a recourse to arms of precision would be resorted to in default of an amicable arrangement ; but, thanks to the skillful handling of the matter by our Secretary of State and the return to common sense on the part of the statesmen of Italy, this calamity was averted.

Well, gentlemen, such an outcome to the dispute would have been a matter gravely to be deplored, but I doubt whether it would in the long run have proved more disastrous to us than is the constant and ever-increasing flood into this country of the lowest, most degraded and often plague-stricken populations of the Latin, Hungarian and Slavonic races.

These people bring with them here and perpetuate the unsavory and insanitary habits of life under which they existed in their own lands with an utter disregard of those elementary principles of health which do obtain among the poorest classes of our own citizens ; and thus when an outbreak of disease or epidemic occurs, these foreign settlements of Italians, Huns and Slavs, etc., form nuclei or hotbeds of infection from which points of vantage disease and death hold high carnival.

I do feel most strongly that it is the imperative duty of our representatives in Congress to give these matters urgent attention, and take measures to protect the health of our people by excluding from these shores this deluge of undesirable people from other lands, who really add nothing to the prosperity

of our country, but in the majority of instances return after many years to their homes, carrying back with them the money which they have made here, in consequence of the higher wages and prevailing happier economic conditions.

The elements of disorder which accompany this wholesale immigration are patent to everyone, and some startling illustrations have been afforded us in our own State within the last few months ; but this phase of the question is not within our province, although we are fully within our domain in approaching the subject from the standpoint of public health.

There are many moments when we, who devote the best part of our lives to the endeavor to trace back to its source man's greatest foe—disease—to find out its hidden ways and to devise means for overcoming its hidden and stealthy marches upon its unsuspecting victims, must of necessity feel much discouragement at the scanty sympathy accorded to our work.

It would almost seem as if the energies of our statesmen were concentrated upon the health of the American hog and bullock. They are the subjects of much affectionate solicitude, and the resources of our great legations are exhausted in the endeavor to induce foreign governments to cast favorable eyes upon these much-maligned animals and permit them entrance into their countries.

If cholera breaks out among hogs immediate attention is given them by the local authorities, or if pleuro-pneumonia shows itself in cattle nothing is left undone to stamp it out ; and in the same way, if our corn or potatoes are attacked by a parasite the whole science of the country is brought to bear upon the question.

In doing this our legislators and local authorities simply obey the mandates of the people whose servants they are, or ought to be. It is not that they undervalue human life, or set animal life above it, but simply that in the one case the results appeal directly to their pockets, while the other lies more in the region of feeling and sentiment.

During the cattle plague that devastated England some years ago thousands of valuable beasts either died from pleuro-pneumonia or were slaughtered to prevent the spread of the disease ; and the loss in money amounted to millions of dollars ; but if the same number of human beings had died from an epidemic, the loss in money would have not amounted to anything ; and yet how immeasurably greater the one calamity than the other. The subject is a thorny one and almost impossible of correct presentment.

What, however, we of the medical profession feel, and feel strongly, is that there ought not to be anything in the shape of a " favored-nation clause " in regard to public effort and expenditure for the prevention of disease among animals as distinguished from that among the human race. •

The neglect and supineness which exist among our authorities sometimes strike me as almost criminal. Take, for example, the question of the sewers in Philadelphia. I have no hesitation in saying that they are probably the worst in the world, at least in a city of her rank and importance. The day will assuredly come when, the conditions for it being favorable, some terrible outbreak will drive the lesson home in a way that now seems impossible.

But certain it is that not until our people in Pennsylvania realize that without health nothing is worth having, will the State Board of Health take that place to which it is entitled, and be regarded as the most important body in our State Government. A Minister of Agriculture is a very useful and important personage, and the health of our flocks and herds is of vital moment to us, yet it cannot be compared with the supreme question of human health and, therefore, happiness.

When we who are willing to march daily into the camps of the tubercle bacillus—the more deadly anthrax bacillus, those of diphtheria and typhoid fever—come to be regarded as soldiers who risk their lives for those who are living in their comfortable offices and counting rooms, then, and not until then, can we expect that support which is justly due to those who will face leaden bullets and give their lives to benefit their fellow-creatures.

The discoveries which have been made within recent years encourage us to go forward in the endeavor to stamp out disease before it reaches a point beyond our grasp. “*Venienti occurrere morbo*”—Hasten to meet the coming disease—is the true watchword of our profession.

We know now that disease is either originated or, to say the least, much aggravated in most cases by a micro-organism which enters the body from without, thereby bringing more lives to a premature end than has ever been caused by the fiercest of wars and bloodiest of campaigns. With this knowledge before us we are encouraged and stimulated to take our lives in our hands in order to study and learn the life-history of these our greatest foes; and, therefore, it seems appropriate that we should take the subject of tuberculosis this evening as one of the diseases which has proved so deadly and caused so much suffering, and speak of what we know concerning its origin, growth, etc., etc.

Yet, gentlemen, there is no subject that has been so thoroughly diagnosed during the last year as tuberculosis in regard to its causes and effects, its treatment and prevention, and I doubt whether it be possible to summon a set of professional men who are more conversant with this malady than those comprising the Board of Health of Pennsylvania, whom I am now addressing; therefore, all I can hope to accomplish is to lay open this subject in all its varied aspects for your more thorough discussion from a sanitary point of view, for there is now abundant evidence of the preventability of this disease to a greater or less degree.

In speaking of this disease, I must confine myself to phthisis and those maladies accompanied by the tubercle bacillus. Whether the tubercle bacillus only becomes a specific irritant, or is *per se* the cause of tuberculosis, after making caseous degeneration of inflammatory products its habitet, we do not know; we must not, therefore, scoff at Klein, Gibbes *et al.*, who are endeavoring to show that the tubercle bacillus is not always to be found in the very early stages of this disease. Work in this direction brings about a healthy condition of original research. At present we possess but little knowledge regarding the life-history of this microbe.

In our searches for this single-celled organism, as it is found in diseased animal tissues outside the animal body, we have only found it in such places and under such circumstances as justify us in believing that it has been secondarily deposited there either by the excretions of tuberculous animals or dead tuberculous tissue.

What its cycle of life is outside the animal economy we do not know, but we do know that on certain artificial culture mediums we can grow it to such an age that instead of its morphology being a straight rod, as usually described, it will be seen throwing out branches.

From the fact that we find these branches of such varying lengths, I am inclined to believe that it is not the result of a union established through coalescence, but to the displacement of the cells. This condition, however, is not at all permanent, as a fresh culture medium will, from masses of these branched forms, grow the simple rod-shaped bacilli, yet after continuing the transplantation of the micro-organism in this more complex stage on to a fresh medium twenty-five times or more, its power to produce tuberculosis in the animal economy is much reduced; in fact, I have young dogs, guinea-pigs and rabbits resisting large inoculations of these growths, while the control animals inoculated with the second removal of bovine tubercle bacilli have developed general tuberculosis, or a form of disease which means death to the animal affected, and, at the same time, have present all those features which are thoroughly characteristic of human tuberculosis in its histology, etc., etc.

This result, however, will make us halt at the threshold of the germ theory of disease, and prompt us to ask whether or not it is a toxic agent that is carried in with the bacillus, or whether the bacillus has been cultivated after living on caseous tissue to break down healthy cells into the caseous condition which may be essential for its own existence.

The very fact that we all breathe the so-called tubercle bacillus, and many resist its attack, shows, beyond doubt, that it holds, at least, an intermediate place between the lion and the maggot. The former overcomes and destroys the deer in full and perfect physical health, while the latter can only prey on lifeless matter. The tubercle bacillus may be saprophytic.

These speculations must stimulate us to carry the line of investigation still further, so that the results thus far obtained may be brought to bear in disproof or confirmation of one of these theories. If further investigation shows that the pabulum is the factor concerned in reducing its virulence, we must conclude that the tubercle bacillus at most only becomes pathogenic or disease-producing when cultivated on a particular pabulum.

Another interesting observation, that it has been my pleasure to watch, is that a mass of bacilli, far removed by artificial culture from the original tuberculous tissue whence it was taken, will not, when introduced subcutaneously into the animal economy, produce the immediate general toxic effect observed from the introduction of a mass only twice or thrice removed.

Again, my observations enable me to conclude that the power of the tubercle bacillus depends largely upon the health of the animal into whose system it is introduced.

If an animal is poorly fed the power of the bacillus is much more marked, as it is also in animals kept in small cages or exposed to bad ventilation, and, again, in those kept in filthy pens.

My animals, kept for experimental purposes in the country, under proper sanitary conditions, being well fed, in clean cages, placed in pure air, and permitted to enjoy the sun's rays for many hours of the day, when not too hot, have a much greater resisting power than those kept in my city laboratory.

These experiments are quite consistent with the known facts that, where there is the greatest exemption from the malady, viz., on the high mountains, in the deserts, in the Arctic and Antarctic regions, it is yet to be found under insanitary conditions.

These facts I will apply further on in my address.

While acknowledging, however, our ignorance regarding the life-history of the bacillus, as well as just how much power it has to produce tuberculosis when taken into the lungs or stomach of a perfectly healthy man, unless accompanied by much of the toxic substance so generally found with it, we do certainly know, beyond all doubt, that by feeding carnivorous, herbivorous and omnivorous animals with caseous masses of bovine tubercle bacilli, we can produce deadly tuberculous conditions, let them be quite similar or not.

I have accomplished this by feeding raw bovine tuberculous lung to a puppy-dog six months old.

This being established with the dog, in which animal exists a great similarity between its mucous membrane and that of man, plus the fact that the digestive juices of the dog's stomach are the more acid of the two, we are forced to the conclusion that man can contract tuberculosis by eating raw bovine tuberculous meat.

To bring this still nearer to a condition likely to be met with in everyday civilized life, I roasted in an oven a piece of bovine tuberculous lung, weighing, I should suppose, about two pounds, until it was certainly better done than most of the roast beef eaten by our epicures. From the center of this piece of lung I opened a tubercle and grew from it bacilli. This should have been carried still further in a practical line by injecting a mass of it into the body of some one of the lower animals, so as to eliminate, as far as possible, the element of conjecture; yet, gentlemen, the experiments were quite sufficient to confirm me in the belief that, in all probability, a man can contract tuberculosis from eating the muscles of the cow, sheep, horse or fowl containing tuberculous lymphatics, let alone the more dangerous viscera, such as the liver, spleen, lung, kidneys, etc.

If the tubercle bacillus is a spore-forming fungus, as I am inclined to believe it is, we do not know just how much heat is necessary to render the spores sterile; this can only be determined when we learn to recognize them when present.

As long as my conclusions in this regard remain unimpeached, I must look upon tuberculous meat as a very dangerous article of food, at any rate, for those who are at all disposed to a caseous breakdown of the tissues; and as that condition is often not manifested until the system has taken on tuberculo-

sis, it behooves you, as our guardians of health, to forbid the rearing, selling or eating of such meat.

From our present knowledge on this point we must deem it prudent, nay, we must prohibit the consumption of any food containing micro-organisms recognized as tubercle bacilli.

Cows suffering from tubercular mammitis will produce milk and cream containing those bacilli, and I expect yet to be able to find them in the milk of cows affected with pulmonary phthisis only; however, in well-marked tubercular mammitis I have never failed to prove the presence of bacilli in the milk.

If a test-tube of this milk is set aside for a few hours the micro-organisms are found in greatest abundance in the sediment, while a few can generally be discovered in the cream. Some of the bacilli I observed so closely resembled those found in human sputum that I would have diagnosed them as growing in that medium. Some were quite as large, while others presented that beaded appearance that has so often been spoken of by bacteriologists as characteristic of those grown in the human economy.

This, however, was not at all surprising to me, as I have never been able to believe that the very slight morphological distinctions made by Klein, Gibbes and others were of any significance so far as the power of the germ or its toxic agent was concerned in producing a very similar disturbance in the animal economy.

Not that the bovine bacillus, as found in the giant cell of bovine tuberculosis, does not average smaller and of a more even texture, but from the fact that many are quite the same size, and that on removal on a nidus rich with glycerine immediately grow bacilli equally as long and as beaded in appearance as those found in the sputum of man; and, again, when passed once through the tissues of a guinea-pig, they have produced the same morphological characteristics; therefore, I cannot, from my own practical experience, differentiate, as far as infection is concerned, between the human and the bovine tubercle bacillus.

Certain it is that we can, by inoculating the dog with human tubercle bacillus and its debris, produce a wasting disease, accompanied by tubercles quite similar to those generally found in man.

Scientifically, it will be of particular interest to have the bovine and human tubercle bacillus differentiated; yet, at present, for all sanitary purposes, we will have to consider the tubercle bacillus of the cow, accompanied with its nidus, as being destructive to human life, for it is well established that the bacillus of man will produce in the lower animal economy, such as the cow, dog, guinea-pig, rabbit, opossum, etc., a deadly malady, and that the bacillus from the cow will also bring about a like disturbance in the same line of animals, and, further, bacilli from the rabbit, etc., will, in turn, reproduce tuberculosis in the cow.

From this intercommunicability we must believe the tuberculous lymphatics interspersed in the muscles and the liver and the kidney and other of the viscera that are subject to the growth of bacilli, such as found in the cow or

fowl, are capable, when ingested into man, of producing a disease quite similar.

We must also look upon milk, cream and, consequently, butter as another channel through which like diseases, fatal to man, may be communicated.

It would seem well settled that matter containing either bovine, human or chicken tubercle bacilli, when subcutaneously injected into a variety of animals, will produce a deadly disease that many of us are yet unable to differentiate from a tubercular malady.

Again, we have undeniable evidence that like matter will manifest the same power of harm when fed to such animals as respond to the inoculation; yet, at the same time, we must admit that there is no direct proof of the transmission of such a malady to man by his feeding upon what is now designated as tuberculous meat or milk. And I fear it will be a long time before we can establish it by direct evidence, as man is exposed to this dire disease in a hundred and one ways during the long time elapsing between the period of infection and the manifestation of any symptoms.

Among the arguments against the probability of tubercular disease being communicated to man by the ingestion of tuberculous matter is the one that tuberculosis in man rarely manifests itself as a primary lesion in the intestine. This, however, is not at all conclusive, for it is quite probable that the lymphatics, situate so near the frontier, where they are continually skirmishing with the enemy, become, to a limited degree, immune; consequently, the invader will only gain the victory by making his way into a more remote portion of the territory, where there is less resistance, and there become established.

It may be taken into the lacteals, on into the chyle, and thence into the circulation, by which it can be carried to the most remote parts.

In children we often find tubercular lesions of the abdominal glands only, all other viscera being entirely free from any form of tuberculosis. I feel sure that time will soon reveal the fact that this is more often the case with adults than is generally believed.

However, from the fact that a tuberculous condition is transmissible through the digestive tract from man to many of the lower animals, and from one lower animal to another, backward and forward, we must, for the present, conclude that a tuberculous malady can be transmitted from tuberculous meat, milk and butter to man. Also by dentists' instruments conveying sputum from one to another, by cooking and cooking utensils handled by those having tuberculous matter on their hands; for instance, bread or other dough-containing foods, pulled candies and the like.

In my individual search for tubercle bacilli, I have found them in human sputum, in tissues of man, horses, cows, dogs, cats, rabbits, opossums, guinea-pigs, hogs, ostriches, fowl, street railway cars, dwelling-houses, and bacteriological laboratories, and in tooth brushes.

If the tubercle bacillus is to be found in street cars and dwellings, we must believe it to be in the air of most inhabited places, and the more thickly populated and the more filthy the air the greater will be the proportion.

This being the case, it is for us to decide on general principles and facts whether or not we are to conclude, for our present purpose, the probability of tuberculous material infecting the animal economy when commingled with the inspired air with which our diseased mucous membrane and outside skin are being constantly bathed.

It seems to me we must suspect the abraded mucous membrane of the respiratory and oral tracts or injured skin, when covered with eczema or other skin diseases, of being likely points of entrance.

By lacerating the gums and the lining of the oral cavity of the mouth of a guinea-pig—not more than the dentist often lacerates man's—and powdering the wounds with a mass of tuberculous material, I have caused to be produced a submaxillary disturbance macroscopically resembling tuberculosis, while the microscopical examination revealed tubercle bacilli.

While most of the inoculations on guinea-pigs for experimentation are made by subcutaneous injections, I have also succeeded in producing infection by rubbing a mass of the bacilli on a superficially lacerated skin, and sealing it over with rubber cloth and sticking plaster.

Other experimenters have irritated the respiratory tract with ground glass, and then compelled the animal so treated to inhale particles of the tuberculous material, and thereby produced what they have described as tuberculosis.

We must, therefore, believe, for practical purposes, that the lower animals can be infected with a deadly disease closely related to tuberculosis either by the inspiration of tuberculous matter on the injured mucous membrane of the respiratory tract or through the injured skin when besmeared with tuberculous material.

These facts, coupled with those already alluded to, showing that human tuberculous material is capable of infecting the guinea-pig, rabbit, opossum, calf and other animals, in almost, if not in precisely, the same manner as the tuberculous material of a cow will affect the same kind of animals, and, further, that tuberculous material from a guinea-pig will infect the other animals in exactly the same manner as when taken from man or cow, compel us to conclude that man suffering from inflammatory processes or traumatic conditions of the mucous membrane or skin may contract a deadly disease from germ particles in the air.

Just how long tubercle bacilli or their spores, if such exist, can retain vitality after isolation from a favorable nidus, such as tissue or pus, we do not know; yet we have a good right, reasoning from the life of higher fungi on up through green vegetable life to that of fish and mammals, to conclude that the act of separation from the nidus does not *per se* cause immediate death of the cell, but that some time elapses before the germ dies in its non-life-sustaining surroundings.

If this be so, and the separation is constantly going on in man's immediate presence, why should the toxic agent not again implant itself on his abraded skin or mucous membrane while it still has vital power?

Even should we have to admit that the very act of separation of the disturbing germ from its original pabulum is presently fatal to its life, we must not

forget what experiment has already demonstrated—that a very slight current of air can carry with it not only the germ, but also its nidus.

From the fact that, in studying microscopic preparations of lung tissue, we often find particles of coal that have worked themselves down into the very alveoli, we must, at least, suspect the possibility, in fact strong probability, of the tuberculous matter also working its way into the finer ramifications of the air passages.

The function of the respiratory apparatus is to convey air from without into the body. Its construction is such that, in full health, it screens out most of the light, short particles of deleterious matter, yet, when at all diseased, it must, we believe, lose this power to a greater or less degree.

Dr. Arthur Ransome has shown that in bronchitis and catarrh, and other diseases in which there was much expectoration, the proportionate amount of organic matter exhaled from the lungs was only one-half of that from the healthy person—not that there was less organic matter excreted, but because it was held by the mucus before it reached the mouth; and Prof. Tyndall, as you must all remember, has demonstrated, by means of the illuminated tube, the filtering action of the respiratory organs.

Under such conditions as chronic bronchitis the ciliæ must, of necessity, lose their power to expel foreign material. The muscular walls become weakened, and dilatation and plugging, in all probability, take place, and the bacilli find a quiet *habitat* and a medium wherein to fructify.

Catarrhal pneumonia furnishes a goodly example of this condition predisposing to tuberculosis.

We cannot, however, make any estimate of the possibility of the harm arising from the entrance of such material into even the most remote and inactive portions of the healthy lung tissue.

This, however, is not necessary for you to consider as sanitary officers, inasmuch as there are few men, with perfectly healthy respiratory organs, who ought to look to you for protection against the invasion of this most fell disease. This, coupled with the fact that the healthy, if any, are constantly commingling with the unhealthy, makes it incumbent on you to render all places sufficiently harmless to both, particularly if you believe that tuberculosis in the air is hurtful to man in such health as the average human being enjoys.

It would appear, from what has been said, that it is probable that man, when in a certain condition, is susceptible to tuberculous infection when exposed to the *materies morbi*, and that it may make its entrance into the animal economy either through the stomach, the mucous membrane of the digestive or respiratory tracts, or through the abraded skin; and, further, that man is constantly exposed to the toxic agent, and yet all men are not affected with tuberculosis.

I have little or no doubt but that all of you can remember instances when men have been severely exposed to tuberculous material, and lived to a good old age untainted with the disease, while others who have been, in all probability, but slightly exposed have taken on the infection.

This special susceptibility demonstrates that some must furnish a suitable soil, and that, in such cases, the affinity of the constituents of the tissue must be weak, and thus enable the toxic agent to break it up and pass through the process of tuberculosis.

This condition, we must admit, is often hereditary. We have seen very many instances of members of the same family, living in different and far-distant localities, who have, at or near a certain age, succumbed to tuberculosis.

We cannot explain all the possible inherited factors, yet we can readily conceive mere abnormal and inconsistent proportions of the viscera as being a predisposing cause ; a mere mechanical course pursued by the air passages, weak ciliæ in the air passages, digestive glands that secrete a weak gastric juice, papilli of the intestinal canal incompetent to make a proper selection of food, or a weak phagocytic power may each afford a cause for susceptibility. .

There is certainly inherited not only a tendency to contract but a marked readiness to yield to an attack.

Hereditary predisposition is often intensified by intermarriage. If we find in the bovine foetus tubercle bacilli we have an heirship. The parent in this case certainly, to say the least, bequeaths to its offspring that which it actually possesses.

After an experience of breeding over a hundred animals, I am convinced, that interbreeding intensifies either strong or weak characteristics. However, this predisposition, only furnishes a soil or habitat for that material so universally found in tuberculosis.

A predisposition in man can also be cultivated. Vitiated air is one potent cause ; under this condition the blood is not properly oxidized, therefore the digestive function becomes impaired, the tissue weakens, and susceptibility is acquired.

Prebreathed air or house air with a lack of physical exercise is responsible for much tuberculosis acquired by man, not only directly, but also indirectly, by rendering the cattle he eats predisposed to tuberculosis.

Active ventilation in our dwellings and public buildings, factories, and mills, etc., is essential for the prevention of the disease.

We have no scientific proof that foul air in any way nourishes the tubercle bacillus or that it increases its virulence, yet we do know that it reduces the resisting power of the animal economy, and that a lack of a free interchange of air permits of an accumulation of the bacilli.

For instance, if 10,000 bacilli are given off into 1,000 cubic feet of air, there would be ten bacilli in each cubic foot of air breathed ; whereas, if the interchange of air furnished 10,000 cubic feet in the same length of time, each cubic foot of air inspired would only contain one bacillus.

Laboratory experimentation proves beyond doubt that the quantity of tuberculous material taken into the animal economy decidedly affects the rate of mortality. This fact is entirely consistent with the well-authenticated statistics showing a much larger mortality in crowded places and goes to establish the absolute necessity of interspace ventilation to prevent the spread of tuberculosis.

This being the case, it goes without saying that the ventilation of the streets and air spaces of cities, towns, etc., is also necessary to maintain the health of the inhabitants.

Statistics show that in proportion as people are attracted to indoor occupations and in proportion to the degree of closeness from want of proper ventilation of the buildings in which they work, in that rate is the ratio of deaths from tuberculosis increased.

Dr. Bowditch has shown us the extreme danger of dampness of the soil as a cause of tuberculosis, and has called our attention to the necessity of the more thorough drainage of the land. . . Dr Bowditch's results have been confirmed by Dr. Haviland and by the Registrar-General of Scotland.

In the conclusions drawn from the map of distribution of tuberculosis in Great Britain, Dr. Haviland states: "Damp, clayey soil, whether belonging to the wealdon, oolitic or cretaceous formation, is coincident with high mortality."

Gastro-intestinal disorders, that so generally precede tuberculosis, point to the necessity of proper and sufficient foodstuffs.

The disordered stomach may of course in a number of cases be secondary to tuberculosis, yet there cannot be a doubt as to its also being one of the predisposing causes.

As there is nothing that affects the wealth and happiness of the people of this great State more than ill-health, and as there is no one poison that interferes more with health than tuberculosis, which not only too often robs us of those in the prime of manhood and womanhood, but renders thousands upon thousands a burden to themselves and their families for years, yet it is happily a preventible disease, and this Board should be armed with authority and means to enforce and carry out sanitary laws essential to that end.

To accomplish this most important work it must be evident, after what we have reviewed this evening, that you should have legislation regarding the disinfection and destruction of tuberculous material, especially human tuberculous sputum.

There should be a law compelling passenger transportation companies to furnish receptacles containing either water or a germicide for sputum, both in their cars and stations. The same law should apply to all places where large numbers of persons gather together either for the purpose of work or amusement.

To enforce the expulsion of dust in our factories and workshops.

To compel the thorough sprinkling of the public highways immediately before cleansing.

To forbid spitting on the sidewalks.

To compel the drainage of damp soils before permits for building dwellings are granted.

Rules should be formulated for air space and ventilation of all buildings, and the builders and architects required to submit their plans and specifications before the work of building can be commenced. This certainly is quite as necessary and practicable as the present law in Philadelphia and other cities regarding plumbing.

Not only must we have a law requiring a certain air space and ventilation in our buildings, but also around our dwellings, workshops, etc.

The width of all new streets and passage-ways should be of a sufficient breadth. Every block of buildings should have a complementary garden or park. Every building should be accompanied by a certain air space.

Such topographical regulations must be insisted upon in our growing cities, if we mean to reduce the present alarming death-rate and suffering from phthisis.

This ventilation of our cities and towns by the laying out of wide and diagonal streets and reservations of open spaces for gardens and parks, is essential for the successful ventilation of our buildings.

A pure and constantly renewed atmosphere is requisite for the prevention of consumption. This is well known and universally admitted beyond doubt or controversy.

All knives, forks, spoons, cups and other eating utensils should be thrown into scalding water immediately after using, otherwise the tuberculous sputum will be carried from one person to another.

Dentists and physicians should be required to disinfect their instruments according to a law of the State, and be subject to inspection and a heavy fine for a violation of the same.

The cleansing of all public conveyances should be regulated by law.

We should have laws regulating the ventilation of our animal stables. Cows, like men, require physical exercise and pure air and light to enable them to resist tuberculosis.

The hot, close, dark and dirty stables throughout our State are important factors in promoting tuberculosis in our cattle; therefore, regulations should be formulated for ventilation, light and cleanliness of animal sheds and stables. These should be under the inspection of competent and honorable inspectors.

Soiling of cattle should be forbidden by law.

As there are at present so many cows predisposed to tuberculosis, and as it is more than probable that interbreeding intensifies predisposition, it should be defined and forbidden.

All consumptive animals should be condemned and killed after having been valued and paid for by the State. The vending of the meat of such animals should be made criminal.

At present cows suffering with this disease are constantly being sold in our markets for the manufacture of mince-meat and sausages.

The breeding of tuberculous animals, the killing of which, at any time, should be delayed for the want of a sufficient appropriation to pay for the same, should not be permitted.

The sale of the milk of such animals should be forbidden under a heavy penalty.

As tuberculosis, actinomycosis, lymphadenoma and rheumatism with enlargement of the joints would frequently be taken the one for the other by the laymen, competent government inspectors should be appointed to make period-

ical and special inspection of all home cattle as well as those about to be brought into the State.

All butter and milk imported into the State should be subject to inspection for tuberculous material. All meat exposed for sale in our markets ought to be subject to inspection and condemnation.

The law should require physicians to report tubercular cases.

The proved transmissibility of tuberculosis from one person to another brings us face to face with the necessity of considering the question of admitting to our country tuberculous immigrants.

Inoculation with tuberculous matter for the cure or prevention of tuberculosis cannot at this stage be recommended for general practice, as too few test cases of cure have yet been brought to an entirely satisfactory conclusion, while immunity in some of the lower animals has been sufficiently demonstrated in my own laboratory, since my first publication in the *Medical News* of 1889, to confirm me in my belief that it can and is produced to a greater or less degree.

However, the risk of producing a diseased condition and the uncertainty of degree and duration of immunity are at present unknown quantities to me; therefore, I cannot now recommend that which my results on the lower animals gives me reason to believe I will at some future time be able to advise as a public measure.

By the agency of the tubercle bacillus, I believe we will have a means to prevent tuberculosis, and to diagnose and cure those who have fallen victims to the malady, yet at present I am of exactly the same opinion as I was two years ago, when I cured my first tuberculous animal, which animal happily still lives to speak for itself.

Should Tuberculosis be Made Returnable to the Board of Health? *

BY LAWRENCE F. FLICK, M.D.,
Of Philadelphia.

THE question whether tuberculosis ought to be made returnable to the Board of Health hinges upon the following propositions: (1) whether the disease is contagious; (2) whether it is contagious in such a way that a knowledge of its whereabouts would be of any practical benefit in efforts at prevention; and (3) whether anything could be gained in scientific knowledge by the return of the disease.

The question of the contagiousness of tuberculosis has been so thoroughly discussed during the last few years, and the theory that the disease is contagious

* Read before the State Sanitary Convention of Pennsylvania, at Altoona, May 15, 1891.

is now so generally accepted, that it is scarcely worth while to say much about it. I will, however, briefly sum up the evidence in support of the theory, and review some of the objections made to it. By far the most exact and convincing evidence in support of the theory is the series of experiments begun by Kortum in 1789, carried on by many of the brightest lights of the medical profession during the succeeding century, and so brilliantly brought to a climax by Koch in 1882. From the days of Hippocrates, every philosophical bedside observer had arrived at the conclusion that tuberculosis was contagious, but he could not demonstrate it to the satisfaction of others. By the aid of the new light which was thrown upon histology and pathology by the microscope, men began to see new ways of demonstrating what could not be demonstrated by clinical evidence. It was first observed that tuberculosis was a disease peculiar to itself, and always the same wherever it might occur. From this observation it was naturally deduced that the disease must always have one and the same cause, and that with the discovery of that cause it could be produced artificially. Accidental inoculations clearly enough pointed to where the cause should be looked for. Inoculations with broken-down tubercular tissue taken from man produced the same identical disease in animals, and this with such unerring certainty that, ordinarily speaking, there could be no doubt as to cause and effect. From a scientific point of view, however, this was not sufficient, and the inoculability of tuberculosis was not considered demonstrated until Koch isolated the disease germ which produces the disease, propagated it for many generations, and with germs removed from the original parent by millions of generations, produced identically the same disease. The experiments of Koch have now been performed, and his statements corroborated by so many able and conscientious men of various nationalities, that the deductions growing out of them, namely, that tuberculosis is inoculable, must be accepted as absolute truth by all men who accept logic as the basis of truth. If a disease is inoculable, it is necessarily communicable, and if it is communicable it is necessarily contagious. There is no use quibbling over the meaning of words. Every disease is contagious which does not arise in the sick person of its own accord, but is produced from contact, direct or indirect, with someone who has the same disease. The inoculability of tuberculosis, whilst being admitted by the opponents of the theory of contagion, is explained away as a mere incidental phenomenon, and declared to be of no value because it is not borne out by clinical evidence. During the last few years, however, clinical evidence has been accumulating in sufficient amount to satisfactorily establish the theory of the contagiousness of the disease, even without the aid of experiments. In the first place we have reliable observations that houses which have been inhabited by tuberculous patients are infected and will convey the disease to others.

Cornet found that scrapings from the walls of rooms occupied by consumptives when introduced into the veins of animals produced tuberculosis. My topographical study of tuberculosis in the Fifth Ward* of the city of Philadelphia

*"Contagiousness of Phthisis," by I. F. Flick.

showed that houses which had been occupied by consumptives became centers of infection ; that deaths occurred in them from the disease right along for an indefinite period ; that all the deaths from tuberculosis in the ward during a period of twenty-five years were confined to less than thirty per cent. of the houses of the ward ; and that some houses, I may say many houses, had as high as six to eight deaths from the disease during that time. The same observations have since been made by others.

Cornet has shown that persons nursing consumptive patients die much more frequently from the disease than do people in other avocations. He found that among the nursing orders of Germany the mortality rate from tuberculosis was 62.89 per cent., whilst among the people at large it was only 23.78 per cent.*

An historical study of tuberculosis is in itself sufficient to prove its contagiousness. The disease did not exist in America and in many of the islands in the Atlantic and Pacific until it was introduced from other countries, and when it was introduced it became very prevalent. Countries, which were colonized by Spain, where preventive measures were practiced at the time of colonization, remained free from the disease until it was introduced by other nations.† The theory is, moreover, proved by successful efforts at prevention. Isolation in special hospitals has reduced the mortality from tuberculosis in England 50 per cent. during forty years.‡ Preventive measures practiced in the kingdom of Naples during upward of a century have almost completely wiped out the disease.§ From a terrible pandemic which caused people to die in large numbers daily from the disease, tuberculosis has become so infrequent that, except in large cities and resorts for consumptives, the disease is now seldom seen. To sum up, we may then say that tuberculosis has been demonstrated to be contagious by experiment, by clinical observation, by history and by successful preventive measures. As to the argument against the theory of contagion, the most plausible one, and the one most frequently used, is that if tuberculosis were contagious every person ought to die of the disease, because we are all constantly exposed. This argument finds its main force in a general, and I might say almost universal, misapprehension of facts. The pernicious idea prevails that the entire world is swarming with tubercle bacilli, and that wherever we go we must inhale them. The facts are that the tubercle bacilli are confined to certain environments, and that they cannot maintain life very long outside of those environments, and that consequently we can only be exposed to them under certain definite circumstances. The human economy, moreover, has a great resisting power over all parasitic life, and therefore requires considerable exposure to disease in order to contract it. It is upon the ignorance of these two facts that all arguments against the theory of the contagiousness of tuberculosis are constructed.

* *Zeitschrift f. Hygiene*, Leipzig, 1883, Vol. VI, pp. 65-96.

† "Contagiousness of Phthisis," L. F. Flick.

‡ *Special Hospitals for the Treatment of Tuberculosis*, L. F. Flick.

§ "The Prevention of Tuberculosis," L. Outrey, *Experience in Italy*, etc., L. F. Flick.

Now, if tuberculosis is contagious, is it contagious in such a way that a knowledge of its whereabouts would be of use in efforts at its prevention? Tuberculosis has been shown to be contagious only through the tubercular pus given off as broken down tubercular tissue. The most careful experiments by a large number of careful observers have demonstrated this. The bacillus tuberculosis can only live as long it is supported by some foreign matter, from the time of its exit from one host until its entrance into another. It dies upon exposure to the air. Its natural environment outside of a host is pus. It will, however, live and flourish in any animal or vegetable matter. The contagium of the disease being thus confined, it would be a very easy matter to destroy it before it can gain entrance into a new host. To do this it is, however, absolutely necessary to know where it is. To be able to take any effective measures against tuberculosis, it is therefore first of all necessary that boards of health have an exact knowledge of the whereabouts of the disease. The only economical way in which this can be accomplished is to require physicians to report every case of tuberculosis as soon as discovered, and to report every change of location of such case. It is admitted by all that the Board of Health should know the whereabouts of smallpox, scarlet fever, diphtheria and other acute contagious diseases, and the same and greater reasons exist for knowledge of the whereabouts of tuberculosis. The slower and more insidious the infection of a disease, the more important for the Board of Health to know its whereabouts. Smallpox, scarlet fever, diphtheria and other acute contagious diseases spread so rapidly and are so easily communicable that it is difficult to stamp them out by the greatest amount of vigilance and preventive effort. Tuberculosis, on the other hand, could easily be stamped out, for the simple reason that it requires prolonged and intimate exposure to enable it to get a foothold in a new host. The extinction of smallpox and the other acute contagious diseases will, because of their very nature, depend upon an enlightened removal of the requisite soil, such as by vaccination, by improvement in sanitation, etc.; but the extinction of tuberculosis can be brought about even without these, by a systematic destruction of the medium of contagion. In smallpox, scarlet fever and diphtheria, the medium of contagion cannot readily be destroyed, because of the difficulty of confining it, but in tuberculosis, where no such difficulty exists, its destruction is a very easy matter. It must further be borne in mind that tuberculosis, being necessarily a local disease, does not belong to that class of diseases which are or may be preventable by inoculation. No method will ever prevent it except that which destroys the disease germ and thus prevents its entrance into a new host. It is, therefore, of primary importance that boards of health should know the whereabouts of tuberculosis in order to be able to prevent it.

Finally, would the return of tuberculosis be of any benefit to science? A careful topographical study of the disease, which can only be made when every case is scrupulously returned, would soon clear up all the vexed questions about it: we could in this way probably settle the incubation period in human beings, determine with some exactness what part heredity and predisposition

play in its etiology, find out approximately at least what influence soil, drainage, filth and want have upon its development, and what resisting power can be developed by acclimatization. If nothing else were gained than the light which would be thrown on these questions, it would be justifiable to place tuberculosis on the list of returnable diseases.

Now what are the objections to placing tuberculosis on the list of returnable diseases? One of the main objections is that physicians would decline to make such returns because they would consider it an unnecessary imposition of duty. Such an objection should not be considered by sanitarians. Physicians are, because of the privileges conferred upon them by the Commonwealth, custodians of the public health, and are, by an implied contract, bound to do all in their power to protect the public health. The privilege of practicing medicine is necessarily a license, whether so defined by the Commonwealth or not, and the conferring of that privilege makes the recipient of it by that very fact a member of the Board of Health, and bound by all the mandates of that board. Physicians, therefore, could and should be compelled to return all cases of tuberculosis if the Board of Health deems it to the interest of the public health to have such cases returned. Another objection is that it would create unnecessary alarm among the people to place tuberculosis among the contagious diseases. There is nothing in the contagion of tuberculosis to create alarm if that contagion is properly understood, but, on the contrary, a great deal of encouragement and consolation. It will greatly relieve many an anxious mind to be authoritatively informed that tuberculosis is not an inevitable disease to every man or woman whose father, mother, sister or brother died of it. The fact of its being contagious will not frighten them when they know that a little precaution will readily prevent contraction of the disease. The people, moreover, are bound to get the information about the contagiousness of the disease anyway, and it is much better that they get it from our boards of health than from other sources. Still another objection which is somewhat effectively urged is that it would inflict injury and hardships upon property owners. The return of tuberculous houses to the Board of Health need not inflict an injury upon the owner of that house, but on the contrary may be made a benefit to him. The idea that a house once infected by tuberculosis is apt to convey the disease to others is bound to spread among the people sooner or later, and when it has so spread, infected houses will be avoided. To report such a house to the Board of Health, to have it properly disinfected, and to have it recorded in the office of the Board of Health as properly cleansed, or to have a bill of health issued to the owner for it, will relieve the public mind of all anxiety, and will remove all impediment to the renting of the house.

The placing of tuberculosis on the list of contagious diseases is certainly the first step that must be taken by our boards of health if they desire to make an effort to prevent it. Are they ready to take that step? If they are consistent and follow their convictions they must take it. A number of boards have issued circulars, calling public attention to the fact that tuberculosis is contagious. They are, therefore, committed to the theory. Now, if tuberculosis

is contagious it is preventable; if it is preventable the government is bound to take steps to prevent it; and the boards of health, which are the representatives of the government, ought to be consistent with their convictions and take this first step towards prevention.

The Ostrich and the Camel; or, How Some People Treat Epidemics.*

BY CHARLES MCINTIRE, A.M., M.D.,

Medical Inspector, Lehigh District; Lecturer on Hygiene, Lafayette College; Secretary of the American Academy of Medicine, etc., etc.

It is said that the ostrich, when pursued and in danger, hides its head in the sand, thus causing the danger to disappear from its view. And they have a story in the Orient of a poor peasant, who was lying in his hut one night as comfortably as he was able, when, through the opening that answered the purpose of door and window and chimney, his camel thrust his head to protect it from the cold, driving storm without. As the camel's head in no way interfered with the comfort of the peasant, and as it was before the days when physiology was a compulsory study in the schools of that land, he knew nothing, probably cared less, about the camel consuming a part of the oxygen of his atmosphere. Since his comfort was not disturbed, he left the camel to his own device. You all know the sequel—following the head came the shoulders, the trunk, the entire animal; and now, there being no longer room for the two, the heels of the camel are brought into play, and the indifferent peasant spends the rest of the night in the cold.

It is not necessary to inquire into the historical accuracy of either of these statements for our present purpose; the recollection of them was forced upon me while making an investigation for the Board during the past year. It was in one of the prettiest boroughs in the State, a community whose beginnings are associated with Indian treaties and pioneer settlements. Poet and painter have chosen scenes from her history as subjects for their pen or pencil. Her inhabitants, known, and justly, for their intelligence, their piety and their worth, have, by their thrift and business tact, added wealth and prosperity to their other blessings. In such a town as this there was found the antitype of the ostrich, and amidst such surroundings there was repeated the history of the peasant and his camel in a modern and accidental form.

The town is situated on a limestone hill. A river flowing to the south of it forms a valley on that side, and a creek to the west flows through a valley almost at right angles to the former. To the north and east the surface is continuous with the upland or table land, and is a rich farming country devoid of streams. At the foot of the hill to the west of the town, in the valley through

* Read before the State Sanitary Convention of Pennsylvania, at Altoona, May 15, 1891.

which the creek runs, is a fine, large spring of limestone water, which has been carefully covered over, connected with pumping works, and supplies the town with water; the water being hard causes most of the houses to have cisterns, some of them relying alone upon these for their water. All over the hill above deep pits have been sunk down to the rock, down through the rock, each to receive the domestic sewage of the house with which it is connected. There are no sewers except those which convey the excess of surface water from the streets.

Just before the wave of influenza swept over the land in 1889, there was an unusual amount of sickness in this borough; could some of the cases have been typical of all the cases, there would have been no doubt expressed by the physicians as to the nature of the disease, they would have pronounced it, without a doubt, typhoid fever. On the other hand, had some of the rest of the cases fairly expressed the symptoms of all the cases, they would have been equally certain that it was not typhoid fever. And as these cases seemed to gradate into each other by almost imperceptible stages, there was a discussion as to the nature of the disease, but *la grippe* came on apace, and everything was forgotten in the necessity of the hour. The following summer witnessed a return of the disease, with still a difference of opinion as to its nature. One thing was certain, there were many sick, and the physicians were driven at a time of the year when they are apt to find rest. Another fact easy to discover, there were a number of deaths.

This is not the place to discuss the nature of the sickness; suffice it to say that in the progress of the investigation, every physician in active practice in the community was visited, and, with but a single exception, they all testified that they had cases of genuine, *simon-pure* typhoid fever during the period under observation. They all, without exception, reported the prevalence of a febrile disease other than typhoid during the same time; and while they differed greatly in their estimate of the relation of the frequency of the apparently two forms of fever, they agreed, in their estimate, that the undoubted typhoid was the less frequent. Each physician was asked to indicate his cases of undoubted typhoid fever on a map of the borough. In this way 490 cases with 32 deaths were tabulated; 136 of these cases belonged to adjacent corporations. If to this we add the greater number of cases of remittent, or bilious, or malarial, or break-bone fever as it was variously called, we can safely conclude that it would have been impossible for any intelligent person not to have learned upon very superficial inquiry of the prevalence of a greater amount of sickness than usual. There was quite a marked public sentiment that the least said about it the better. One business man said to the Inspector of the State Board, in speaking about a member of the local board of health, who was anxious for a thorough investigation, that "he was an alarmist; the disease had been greatly exaggerated, both as to type and prevalence; it should not have been noticed at all." Said another: "There is no more sickness here than with you." The reverse of this was demonstrated by the inspection. Everywhere the ostrich-like action on the part of the people was evident.

When the town was built and the inhabitants depended upon wells, or more probably cisterns, for their water supply, there was plenty of room in the limestone rock to deposit the sewage; the putting in of the camel's nose excited no remark, caused no alarm. The town grew, and there must be water on tap; what better source could be obtained than this beautiful spring at the foot of the hill? To be sure, the camel was still thrusting himself farther in the hut, but, familiar with his presence, he caused no remark. Time rolls on, cesspool after cesspool is sunk into the rock—some of them within a hundred yards of the spring and sunk to a deeper level than the bottom of the spring. Year after year the filth is soaking into the rock itself, or forcing its way through cracks in the rock; the water system has been extended, a costly pumping station erected and everything in sight kept in apple-pie order. The camel is now well in the hut; there is not room enough in that rock for the pure water and the sewage, and the camel has used his heels in a restive sort of a way. It may not be too late to lead him out; if it is not it will cause a struggle, and it is more than probable that he will now come off victorious, and he shall be left alone in possession of the hill.

Suppose these good people had not, unconsciously, followed so unfortunate an example, what, probably, would have been their line of action? It must be acknowledged that they did a great deal of cleaning up, so that some good was accomplished; but what in addition to this should have been done? In the first place they ought to have enforced the ordinance requiring that every case of the disease be reported, and insist upon a burial permit being issued for every death. This would have given them the accurate facts; it would have opened their eyes on the one hand to the greater prevalence of the disease than many of them suspected, and would have enabled them to have authoritatively contradicted the exaggerated rumors that spread through the country round. The water was, naturally, looked upon with suspicion; one set of analyses was made with rather indefinite results; they should not have rested upon a verdict of "not proved," but have had a series of examinations made until the water was fully acquitted or the extent of the contamination fully made out. Another examination was made some two months later, but these two have not given the desired information; they should have been continued until the character of the water was fully understood. Then with careful and deliberate discussion it should have been determined whether it was possible to oust the camel. If so, whether it was desirable, and if desirable, how should it be done? If the amount of sewage in the rock would prove a source of contamination for a long time to come, then a new source for a water supply should have come up for discussion and settlement. If it could be prevented from doing harm to the water, then would it be less expensive to arrange for the purification of the water and another method of sewage disposal, or to arrange for a new water supply. In this way, calmly acknowledging the danger, probing it to know the full extent, and deliberately planning to overcome it, they would have been able to have done with deliberation and care that which, some day, when the camel indulges again in a display of his heels, they will endeavor to do in haste

and panic, with the accompanying risks of such hastily devised action. Should any of you ever be placed in similar circumstances, I exhort you, even at the risk of being accused of borrowing the thought from a somewhat famed soap advertisement: Don't be an ostrich; and it may be well also to add: Don't trifle with a camel.

The Concealment of Deformity by Dress.

BY JAMES K. YOUNG, M.D.,

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THERE is a natural and justifiable desire, on the part of all who are deformed, to conceal from the public eye, as much as possible, their misfortunes. Many of these deformities can be greatly improved by appropriate treatment, but in severe grades of disfigurement and incurable cases the concealment of misshapen parts is highly proper and should be encouraged in every way.

It might be suggested that the average feminine mind needs no suggestion, since artifice is one of woman's intuitive qualities; but the following hints, which are the result of special practice, may prove instructive and useful, and are, therefore, given for what they may be worth.

Since the disappearance of French high-heeled shoes, enormous bustles, "pull back" dresses and diminutive hats, composed apparently of "two straws and a postage stamp," a period when fashion in deformity of dress reigned supreme, we may now be said to be in a period when fashion in dress is well adapted to conceal deformity, and as such may be highly commended.

In this connection it is greatly to be regretted that the large bonnets of our grandmothers are not worn to-day. Aside from their usefulness in concealing defects and contributing the benevolent and youthful appearance of the features (and who has not observed this effect among Friends and women attached to holy orders), there can be little doubt that the protection of large bonnets is directly influential in creating and preserving the beautiful complexions for which these individuals are distinguished. For the same purpose veils of light and uniform texture are of value in concealing blemishes and disfigurements and in protecting the complexion, but this cannot, however, be said of those dotted fabrics which are very trying and injurious to the sight, and are more ornamental than useful.

Not only are the dresses worn high in the neck, calculated to conceal deformities of the neck, but the high Medici collars of fur coats, the boas of fur and feathers, and the silk lace fichus, worn in various ways, are of great service in concealing what might otherwise be very unsightly. So, also, in concealing lateral curvature of the spine, the broad, high-shouldered fur capes, high, puff

large sleeves and pleated jackets and blouses are of great service. Particularly is this true of the Watteau gowns, with long sleeves and the plastron, or full soft fronts, which, for a like purpose, are invaluable. These long, loose sleeves also fulfill a useful purpose in concealing an emaciated or paralyzed arm.

Even did they possess none of the many excellent qualities which characterize them, the Jenness-Miller garments, of all kinds, would be invaluable for the concealment of deformity alone. Indeed we are not quite sure but that the introduction and popularity of her ideas have not lead to the general adoption of the garments before referred to.

For the concealment of crookedness and inequality of the limbs in children, there is nothing so useful as leggings of different sorts. Those of brown, undressed leather are alike useful for bow-legs and knock-knees, and they may further be strengthened by the insertion within of elastic-tempered springs upon the outer or inner aspect of the leg, or may be worn over apparatus, specially constructed for the correction of the deformities.

To render apparatus of this description less conspicuous, and to conceal deformities of the feet, the cloth and leather overgaiters serve a useful purpose since they are now extensively worn by both sexes. Overgaiters are also of service to conceal cork soles, or pattens worn to equalize the length of the lower limbs in case of shortening, or to conceal what, perhaps, is preferable, a shoe constructed with a cork insole on one side (the shorter side), and a false bottomed sole on the other (the higher side).

In great irregularity of the limbs, the peculiar shape of the specially constructed shoe, with its high instep from the high cork or rubber insole, can likewise be concealed by overgaiters.

In a word, modern dress may be said to be better adapted for the concealment of deformity than any that has been worn for a long period.

The Cure of Consumption.

BY N. K. FISHER, M.D.,
Of Reading, Pa.

I READ the articles in the March and April numbers of *THE ANNALS* on "The Prevention of Consumption," and "How to Cure Consumption," with much interest.

Believing that we cannot say too much on this subject, I take the liberty of sending you the following account of a case obtained from a personal friend in this city:

"Some twenty years ago my health became very much impaired; I was suffering with a violent and incessant cough, with much expectoration and profuse night sweats. At that time I weighed 115 pounds and could expand my

chest $2\frac{1}{4}$ inches. My friends, as also our family physician, said mine was a case of consumption. I commenced treatment in the month of May, 1869, by getting up at six o'clock each morning, taking a light lunch, then walking a mile, and on my return would eat breakfast. As my strength increased, the walk was extended to two and a half miles. While taking these walks my inspirations filled my lungs to their utmost capacity, taking the air in *through the mouth*, forming the lips as in whistling. At first this exercise caused some pain in my lungs, but this soon ceased. In the latter part of the following November, under this treatment, my cough and night sweats had entirely disappeared, my weight had increased from 115 to 139 pounds, and I felt perfectly well. Five years later I weighed 207 pounds and could expand my chest $4\frac{1}{2}$ inches. I have practiced this method of respiration (treatment) more or less regularly ever since, and have not diminished in weight nor chest expansion. I believe the more pure air we breathe and the more oxygen is taken into the blood, the less liable we are of contracting, not only consumption, but many other diseases. It is certainly a great preventive against colds and sore throat, which are so common during the cold seasons. I believe also that where consumption is hereditary (?) and where weak lungs exist, nineteen out of every twenty such persons could be saved from a consumptive's grave by resorting to and continuing this exercise many times daily."

Hygiene in the Confinement Chamber.

BY FRANK W. THOMAS, M.D.,

Of Mt. Airy, Philadelphia.

THERE is one subject which seems to have received but little attention in the endeavors of our hygienists to instruct the public, probably because it is a matter difficult to handle "delicately," or more probably because the labor of instruction is relegated to the medical profession. I speak of the hygiene of the confinement chamber. There are so many cases of birth occurring, at which no physician attends, and so many others at which the physician is summoned in an emergency and has no time to prescribe rules and have them carried out, that popular instruction in the matter seems all-important. Thorough antisepsis among the ignorant poor is at present practically impossible, and even if possible would be opposed and combated like all radical changes. But the doctrine of aseptic cleanliness can be taught and applied without expense to instructor or pupil. What physician has not been called dozens of times to houses where the child was born on a filthy bed, the room fusty and stale, the floor covered with dust, grease and heaps of dirty clothes, the chamber utensils filled with urine and frequently excrement which has stood for hours, and the wash-pitcher filled with scraps of paper, hair-pins and old hair-combings; where hot water had to be procured from a neighbor, and where soap had to be

sought at a corner grocery ; where the nurse was a neighbor who “ knows all about babies,” but with a heart often far more pure than her person and clothing. This may be an extreme picture, but not an exaggerated one. There are other places where relative cleanliness is attempted, where the floors are swept in all places, not concealed by furniture, and where towels and sheets have been hurriedly washed in cold water and present a yellow and unsightly appearance and a stale odor. Details could be multiplied indefinitely, but are not necessary, my object being simply to awaken interest in the matter.

The more perfect the details of cleanliness, of course the more complete the asepsis and the less risk to patient and child ; but a certain alphabet of cleanliness should be taught to all who have anything to do with parturient women. Teach them the value of clean floors, even to corners and under furniture, clean walls and clean beds. Teach them to remove all discharges from the room immediately, to have all dirty clothing and rags removed, and to admit fresh air. Teach them to have a few clean sheets (washed until white in hot soap and water) and a few clean towels, no matter how cheap. Teach them to protect the bed with something which will keep it perfectly dry, and to have at hand a tub or bucket into which any offensive matter may be thrown. Teach them to have at least one-half gallon of hot water on hand and a piece of castile soap.

Let every woman who takes care of a parturient companion be taught that careful washing of the patient's body previous to the onset of labor, with particular attention being given to the genitalia and breasts, will prevent many cases of child-bed fever and diminish the number of cases of baby's sore mouth. Let every woman who pretends to nurse learn the value of personal cleanliness and tidiness. Let her have clean hair, clean body (particularly fingers) and clean clothes. Let the food served the patient be clean and served on clean utensils, and have the remains removed as soon as the patient is done eating. These principles, thoroughly carried out, will cost practically nothing, and I think, without doubt, will prove conservative of some lives and much health.

Do Not Be Toothless.

BY G. W. WILLIAMS, M.D.,
Of Germantown, Pa.

GALILEO claimed the earth was round, and it took several centuries to convince all humanity that he was right. So the conscientious dentist says nature makes it our duty to keep every one of our natural teeth just as long as possible, and it may take centuries to get the world to accept that as sound doctrine. From the standpoint of health, a person had far better be blind or deaf than to be toothless. This is a startling statement, in view of the practice and belief of a large proportion of humanity, but we think any intelligent person can see the truth of it when he considers the value of the teeth in the human system.

Precautions Against Cholera Infantum.*

CHOLERA INFANTUM (summer complaint) is the Herod of large American cities in this latitude during the summer season. In the city of Philadelphia it causes about one-twentieth of all the deaths for the entire year, and one-sixth of all the deaths of infants under two years of age; and this wholesale destruction of infant life takes place in the short space of two months. Continued high temperature, night and day, appears to be its essential cause. It is important, therefore, first, to keep the child cool, and secondly, to keep its food (milk) cool. (Infants at the breast are much less liable to be attacked than those brought up by hand. Therefore, nurse the baby through the second summer if possible.) To accomplish the first object, allow the baby to drink freely of cool (not excessively cold) water; bathe it frequently in cool or lukewarm water two or three times a day if the thermometer is above 90°; keep it in the open air in the shade; take it into the country or out on the water as often as possible. Let it wear a very thin flannel undershirt, or if not this, a flannel bellyband.

To accomplish the second, get your milk from a dairy where it is kept on ice, keep as little on hand as possible—and keep it on ice if possible. As soon as you get it boil it for a few minutes and then add a tablespoonful of lime water to every pint. If the child is seized suddenly with diarrhoea, stop its milk at once, and feed it on raw white of egg, gelatine, barley water, and meat or chicken broth; and do not give it milk again until the diarrhoea has stopped. If possible go away with it to the country at once, or, if you live in the country, go to the mountains. Change of air has saved thousands of children's lives in this disease. Never try to treat looseness of the bowels in a baby in hot weather yourself, but send at once for a doctor. All the precautions suggested in this circular as to the necessity for cleaning up the house, cellar and yard, in expectation of cholera, are equally important as regards cholera infantum.

A Headache Room.†

BY E. K. WINANS.

WE moved into an old Dutch farm-house, which was everything that was desirable down-stairs, but had a great many things undesirable up-stairs. The bedrooms had slanting ceilings over half their space; the windows were set in where the stone wall gave place to wood, and were so high that one must stand by them in order to see anything besides the treetops. There was not a blind or a shutter at any of those windows, and the fresh whitewash came off the walls at

* Instructions issued by the State Board of Health of Pennsylvania.

† From the *American Agriculturist*.

the lightest touch. At first our time was mostly spent in brushing off each other. Gradually we learned to dodge those dangerous walls. I was having blinding, "all-day" headaches then, each week, and determined, since my room must be made over, that it should be a cool, dark paradise for headache. But how to do it? Papering is dear, blinds probably cost a great deal, and I had spent all I could spare on the down-stairs regions. There was just half enough of a restful, darkish paper left over from the parlor—cream-color on gray—and plenty of the border. Happy thought! Put on that paper as far up as the whitewash was bothersome; that was as high as my own head.

It was delightfully easy to do, and the effect was good. According to all rules, the walls should have seemed lower, divided so in half, but they did not. There was a vagueness about the upper walls and ceiling that looked airy and vast. For blinds I had curtains of thick, dark matting inside the thin ones. They could be rolled up and fastened with leather straps when their pleasant shade was not needed. I made a chair, of which I was proud, on purpose for "sit-still," headache days. It consisted mainly of a high back, fastened on a kitchen chair with shortened legs, and was covered to match my big writing table. It was a great comfort, only it would tumble backward unless it stood against the wall. Luckily there was just the corner for it, under a small window, and it held one's head in exactly the right position. Under the large window I put a delightful box, as big as a little room, and carpeted it, and up there had my sewing-chair. It was as good as having a low window. There was room for a bit of a table and a chair for somebody else, though somebody else had to be careful lest she might fall backward over the verge. There was generally a somebody else who had grown tired of standing on tip-toe to look out of her own windows and so had come to my dais.

The bed in a headache room should be in the shadiest corner and have curtains around its head, or one can have a clothes-horse screen, to stand by the wash-stand in times of health and about the bed in days of misery.

Precautions Against Cholera Morbus, Summer Diarrhœa and Dysentery.*

ALL of these well-known diseases occur principally during the summer and autumn.

Cholera morbus is caused by improper food and sudden chilling of the body after exposure to great heat. Certain substances will produce it in certain persons, such, for instance, as veal, raw milk taken with fish, or shellfish, and all dishes cooked with milk, such as rice pudding, cream puffs, and even ice cream *when kept too long*. Unripe and overripe fruit, especially if taken with large draughts of ice-water, will also cause it. But sound, ripe fruit is a natural food in hot weather, and wholesome. Avoid becoming chilled during sleep. In a climate as changeable as ours, a light blanket should always be at

* Instructions issued by the State Board of Health of Pennsylvania.

hand, to be drawn up in case it suddenly becomes cold during the night. Persistent summer diarrhoea is usually caused by malaria, sewer air or impure water. The conditions liable to contaminate air and water should be carefully sought out and remedied as indicated in speaking of Asiatic cholera. The water can be rendered safe by boiling. As dysentery is often epidemic, it is wise to consider every case as a possible source of danger to others, and to disinfect the discharges with the same care and in the same manner as already directed for those of Asiatic cholera.

The Quarantine of Moslem Pilgrims.*

BY SPIRIDION C. ZAVITZIAN, S.
Of Constantinople, Turkey.

Now that cholera has completely disappeared in Turkey, at least according to the official news, the quarantine being abolished, I think apropos to give my report on the quarantine which Moslem pilgrims undergo.

The pilgrims coming from outside the strait of Bab-el-Mandeb before landing at the Hedjaz are obliged to undergo a quarantine of at least ten days at the island of Camaran, and when cholera breaks out in the Moslem Holy Land they again undergo quarantine on their return, at Camaran, going to the Indian Ocean, and at Tor, near Egypt, before passing the Suez Canal.

I must say, first of all, that the pilgrimages in the holy cities of Islam may be the source of epidemics of cholera which not rarely spread all over the world. The majority of pilgrims come from India, which is known as the source of cholera. On their return they infect their places of destination, and the ships in which they sail.

It is useless, I suppose, to dwell upon the imperfect sanitary conditions of the Hedjaz, especially at the moment of the pilgrimage, when hundreds of thousands of men meet in towns of no more than 12,000 inhabitants. A few words about the hospital of Medina will show the state of affairs. This hospital (if indeed it can be called such) is situated in the middle of the town, in the most populous quarter, under the only and public pharmacy. There are here two dark cellars, in which twelve beds are placed, one close beside the other. The M.D. on entering must be preceded by a servant carrying a censer with burning incense, on account of the bad odor which prevails, and when he wishes to write a prescription he must go out of the cellar in order to have light.

To prevent an outbreak of cholera, the International Sanitary Administration has decided to oblige the pilgrims to undergo quarantine before entering the Hedjaz.

In the year 1867 a commission was sent to the Red Sea to examine and find a convenient place where all the pilgrims coming from outside the strait

* From the "Weekly Abstract of Sanitary Reports."

of Bab-el-Mandeb could undergo quarantine. Among all the little islands scattered about in the Red Sea they decided on Camaran.

Camaran is situated about 180 miles northward from Bab-el-Mandeb, one mile farther southward from the Arabian coast. It contains about sixty square miles; there are more than nine sweet water wells, about ten miles from the principal village (Camaran), and, with the exception of a few date palms, it is quite barren. There are five more little villages, whose inhabitants are all fishers.

Since the year 1882 the International Sanitary Administration has established the cordons and the huts where the pilgrims undergo quarantine. Mr. Ducca, M.D., was the first sanitary inspector, and under his direction they built the stores, huts and the cisterns, dug new wells, and generally arranged the lazaretto, yet it is far from meeting the requirements of a model lazaretto.

Since the year 1882 about 147,000 pilgrims have undergone quarantine, carried by 222 steamships and two sailing vessels, besides others carried by samboats, a kind of large sailing boat. The average number of pilgrims landed on the island of Camaran every year is 16,000, the smallest number being 9,067 in the year 1882, and the highest 20,890 in 1888.

Twice since the establishment of the lazaretto (1882) cholera has made its appearance in Camaran. In 1832 an English steamship, the *Hesperia* started from Bombay, bound for Aden, Jeddah and England carrying more than 500 pilgrims, who were obliged to land at Camaran, where nineteen deaths from cholera were registered. The majority of the pilgrims were from Bokhara and Afghanistan, whence they went to Bombay after nearly a three months' journey on foot. Notwithstanding a good bill of health, the *Hesperia* had deaths from cholera during the voyage, but in this year (1882) cholera did not spread from Camaran, although nineteen deaths occurred there.

Last year cholera again made its appearance among the pilgrims landed at Camaran, carried by the English steamship *Deccan*.

These pilgrims were 1,290 in number, and on account of want of room and the monsoon, a strong wind which blows periodically on the Indian Ocean, they were obliged during the voyage to stay under deck. The *Deccan*, after she left Bombay, had sixty-five deaths from cholera among the pilgrims and four among the crew. Arriving at Camaran, the physician of the board, who was not a physician at all, having no diploma, stated the health of the passengers to be good, excepting that a few of them were suffering from simple diarrhœa. He did not state that deaths had occurred during the travel, and that they were due to cholera. On the same day the pilgrims landed, eight of them died with all the symptoms of cholera. The scourge attacked more the Indians from Bengal and the Bokharians. It is to be presumed that it spread to the other pilgrims who were confined in other encampments under sanitary cordons, and we must suppose that these new attacks passed unobserved. By this way we can explain why cholera suddenly made its appearance at Mina or Moona, one of the Moslem holy cities, where the pilgrims go after they have undergone quarantine. From Mina the cholera epidemic spread all over the Hedjaz.

Here I must report that the Egyptian sanitary representative in Mecca presumes, in his report, that the epidemic broke out in the Hedjaz among the pilgrims who came by land from Bassorah and Bagdad through the desert.

The pilgrims carried by the Deccan were prevented from going to the Hedjaz on account of the epidemic, and during their stay at the lazaretto forty-three among them died from cholera.

I have said that the lazaretto of Camaran is far from possessing the sanitary conditions required by science. I must dwell a little upon this question.

Each arrival of pilgrims is set apart in a sanitary cordon, in which huts have been built in order to shelter them. These huts, called *areeshes*, are built of straw; the pilgrims lie on the ground. Neither the hut nor the ground can be disinfected, it not being possible to do any kind of disinfection, although after the departure of pilgrims, it is true, sulphur is burnt.

In each cordon there is a so-called hospital, *i.e.*, a hut in which there is no bed, nor anything for the comfort of a healthy person, much less for a sick one. I must not omit to say that these so-called hospitals have no cesspools.

The pilgrims who go to Hedjaz from the north, I mean who embark at the Mediterranean seaports, are compelled to undergo quarantine only upon coming back, and when the cholera epidemic breaks out during the pilgrimage.

They undergo quarantine at Tor, where the general conditions, sanitary and living, are far worse than those at Camaran. At least in the latter place there are huts, the *areeshes*, under which they are sheltered; the medical service is well organized, as is that of water supply. At Tor there is a small number of tents, which can shelter but a part of the pilgrims, the rest being obliged to be exposed to the burning sun of that climate. The water is of the worst quality, dirty, and not seldom is deficient. The food is as dear as possible, and besides that, poor pilgrims are plundered in an awful way.

During the last quarantine, for instance, in order to deprive them of valuable carpets and other objects, the employees threatened to burn all their luggage as being infected. The unprotected pilgrims, in order not to see all their goods burnt, deprive themselves of what is coveted by the lazaretto men.

It is to be hoped that in future both lazarettos will be improved.

To Prevent Sore Nipples.

Apply a mixture of tannin and glycerine, two drachms to the ounce, daily during the last month of pregnancy. This renders the nipples tough, but elastic.

Egg Lemonade.

Beat all together one goblet of water, juice of one lemon, white of one egg, tablespoonful of pulverized sugar. Good in inflammation of lungs, stomach or bowels.

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EDITORIAL.

It is with great pleasure and a sense of deep gratification that we are able to announce the consummation of a long-cherished project, by which the Editorial and Publication Departments of this journal will become distinct. The anomaly has heretofore existed of one person being both Editor and Publisher of the same journal. In the early days of our publication such a course could hardly be avoided. Now we have reached that condition of substantiality which has enabled us to make an arrangement with a progressive and enterprising publishing house (The University of Pennsylvania Press), whereby they assume full charge of all the business of publication, the editorial management remaining as heretofore. It is needless to say that this change places all parties in a position where the interests of the journal can be best served, and we congratulate our readers that this new and advantageous arrangement will secure for them even a better journal than they have had in the past.

Hereafter, all communications pertaining to the business of the journal should be addressed to "University of Pennsylvania Press," 1600 Chestnut Street, Philadelphia, Pa., and all communications pertaining to the Editorial Department should be addressed "Editor ANNALS OF HYGIENE," care of above address.

As warm weather comes on, "water, water!" is often the meaning of the baby's cry, when it is mis-translated milk or other food.

Infant Dress.

Dr. F. S. Parsons, of Boston, claims that the present method of wrapping newborn babies up like mummies is wrong. The bellyband constricts the abdominal walls and prevents their natural elastic resiliency. It predisposes to rather than prevents hernia. The garment next to the skin should have sleeves and legs so as to allow free movements of all the extremities, and should be perfectly loose. Over this can be put whatever is necessary for warmth and protection.

NOTES AND COMMENTS.

Flaxseed Lemonade.

Pour a pint of boiling water over two tablespoonfuls of flaxseed ; when cool, strain and add the juice of two lemons and two tablespoonfuls of honey. Excellent for coughs and suppression of urine.

Meat Foods.

A timely suggestion has been offered by a German physician, that the date of original preservation be stamped upon each and every can or package containing meat foods. It is held that preserved meats, hermetically sealed, may remain wholesome for a year or so, but that there is danger in the use of such foods after this period.

Early Rising.

Early rising is a very good thing, provided it has been preceded by early going to bed. It is not an easy thing to cheat the body of needed sleep. The old notion that time spent in sleep is in a manner wasted was long ago exploded, and now the study with many an active and overworked brain is how to get enough sleep to keep the brain and nervous system from wearing out before its time.

A Remedy for Burns.

The celebrated German remedy for burns consists of fifteen ounces of the best white glue, broken into small pieces in two pints of water and allowed to become soft. Then dissolve it by means of a water-bath and add two ounces of glycerine and six drachms of carbolic acid ; continue the heat until thoroughly dissolved. On cooling, this hardens to an elastic mass, covered with a shining, parchment-like skin, and may be kept for any length of time. When required for use it is placed for a few minutes in a water-bath until sufficiently liquid, and applied by means of a broad brush. It forms, in about two minutes, a shining, smooth, flexible and nearly transparent skin.

Beware of the House Fly.

The house fly begins life fully grown, mature and ready for business. There are no little flies of the same species, the small ones occasionally observed being different in kind from the larger ones. The house fly does not bite or pierce the skin, but gathers its food by a comb or rake or brush-like tongue, with which it is able to scrape the varnish from covers of books, and it thus tickles the skin of persons upon which it alights to feed upon the perspiration. Although the house fly has no stinger, it is a pest, and a dangerous one at that. It is by nature a scavenger, and is a vehicle by which contagious diseases are spread. It poisons sores and wounds, and may carry deadly virus from decaying organic matter into food.

A Simple Regimen in Obesity.

The *Journal de la Santé* attributes to a medical officer of the French army the latest "cure" for obesity, which is strangely simple in its carrying out. The form of diet was simply a restriction to one dish at each meal, irrespective of what that dish might be, and, no matter whether the quantity consumed was greater or smaller, it was made to satisfy the desire of food to the full at each meal. No supplementary dishes, such as soups, desserts or condiments, were allowed; one single dish, and that taken plain, was found to satisfy the appetite much sooner than a variety of dishes, even if the quantity was apparently smaller and on almost as abstemious a scale. This regimen was employed also in the case of a lady whose embonpoint threatened too rapid increase, with good results and without any discomfort in the observance of the restrictions. In fact, in one or two instances the reduction of corpulence has seemed to go on rather too rapidly, and it has been deemed best to take means for restoration, in a measure, of that which has been lost. Under this system, as under most others, the excessive imbibition of liquids has to be forbidden, care being taken not to enforce the abstinence from water, especially, to the point where symptoms of circulatory depression arise from insufficiency of volume of blood in the vessels.

Coffee: Its Use and Abuse.

A paper on this subject, by Dr. I. N. Love, concludes as follows:

(1) The world has, in the infusion of coffee, one of its most valuable beverages.

(2) As a prompt diffusible stimulant, either by the stomach or by injection into the rectum, it is in all cases of shock preferable to alcohol.

(3) It is antagonistic to malaria and specially destructive to the typhoid bacillus and cholera germ, and for this reason it is an admirable remedial agent in these conditions, both as a direct stimulant, an antiseptic and an encourager of elimination.

(4) One of its chief advantages in health and disease is in the fact that it aids in securing that psychical satisfaction which is conducive to hope, comfort good digestion, great power of resistance and rapid recuperation.

(5) In season, it supports, tides over dangers, helps the appropriative powers of the system, whips up the flagging energies, enhances the endurance, but is in no sense a food, and for these reasons, and many others, it should be used temperately, as should all of nature's benign gifts.

(6) In excess, it is even more dangerous than alcohol, for it is not, like the latter, a nutrient, nor is the effect of its excessive use so apparent or dis-respectable.

In the Children's Hospital, in Paris, Grancher, in order to prevent house infection, surrounds each bed containing a case suspected of being contagious with a screen to prevent personal contact. He assumes that the danger of infection through the air is not great.

Vegetarianism.

A gentleman who has recently returned from Russia relates an incident which, although trifling in itself, is yet most pathetically suggestive of the condition of the poor in Russia, and of the state of things which has bred so deep and so widespread discontent among the people.

Being about to leave some station at which he had been staying for a few days, the gentleman in question called in a moozhik—to adopt the spelling of George Kennan—to strap his trunks. The man was of enormous build, with every appearance of great strength, while the traveler is not above medium height, and while of compact mold is by no means of muscular appearance.

The trunk was rather overfull, and the task of bringing the buckle on the strap into its place was by no means a light one. The Russian tried again and again, becoming short of breath and red in the face with his efforts, while the American looked on at first in impatient silence and then with contemptuous reproaches. At length, losing patience, the traveler pushed the moozhik aside, and with a single quick effort brought the strap down and buckled it.

"There," he said, "are you not ashamed, you great big fellow, to be all this time bungling over a thing that I can do in a minute, and I only up to your shoulders?"

There was no trace of anger in the reply:

"Ah, little father, but you have had meat to eat all your life."

Voluntary Constipation.

In an article in the *Revue de l'Hypnotisme*, entitled "Voluntary Personal Uncleanliness," Dr. Galippe calls the attention of the authorities to the necessity of reforming the sanitary arrangements obtaining in most French educational establishments. Some facts related by him in this connection will be read with astonishment by those who are not familiar with the horrible filthiness of most French closets. He says: "We need hardly remind the reader of the disgusting filthiness of most (school) closets, and I have known sensitive children who refuse to repair to these places until they were absolutely obliged to do so, such is their horror of the stench that there assails their nostrils, and the dirt they may bring away with them. I have known of many children who have suffered much from this voluntary constipation, and of others who, affected with diarrhœa, have for a whole week passed their motions into their clothing." Dr. Bourneville, in a notice of this article (*Progrès Médical*, February 14), says that he has for years urged the necessity of endowing not only schools but also hospitals and barracks with decent closets. He has endeavored to convince the French public of the feasibility of such a stupendous feat by having constructed, for his idiot and imbecile child-patients at the Bicêtre, closets, the cleanliness of which strikes the French visitor with astonishment. M. Bourneville also demands for each school a complete set of bath-rooms, and calls for regulations rendering the use of a bath obligatory on the scholars.

Sanitary Teaching.

The *N. Y. Medical Times* says: "The greatest obstacle to the correct application of sanitary principles is either the ignorance or carelessness of those likely to be benefited. Men of general intelligence will allow their farm-yards, their cellars, their ponds and drains to be breeders of disease, which may endanger not only their own lives, but that of the neighborhood, simply through carelessness or fear of temporary expense. It is true the health boards have been of inestimable benefit to the community where they are located; but if every physician would constitute himself a health officer in the neighborhood where he resides, pointing out the breeding-places of disease, not only in pond and ditch and swamp, but in the houses and the outdoor premises of his patients, he would have a much more satisfactory, if not as lucrative, practice. If the masses of the people possessed that education in sanitary matters which every physician should be prepared to give, the death-rate, in the rural districts especially, would be very much lessened."

A Week Without Sleep for a Wager.

At noon on Monday, March 30, in Detroit, Mich., six men entered into a competition to test their ability to do without sleep for a period of 168 hours, or a full week. Four of the contestants had dropped out before Thursday, the two remaining being Townsend, a six-day walker, and Cunningham, a ship carpenter. Townsend succumbed on Sunday evening, and the manner of his failure, and the great difficulty experienced by Cunningham in keeping up his vigil for the full period, afford a vivid illustration of the exquisite torture which can be inflicted by forcibly depriving one of sleep. At about 10 o'clock Townsend began to weaken; he walked like a man asleep and reeled about the floor. An hour later he complained that the floor had all at once grown very steep and he could not keep on climbing. He stuck to his task, however, until midnight, when he leaned against the wall for a moment's rest. He was so tired that he fell to the floor. The shock roused him, and he begged the watchman to keep him awake, but it could not be done. Again he reeled about the floor for a few minutes, and then, with tears in his eyes, he said it was all up with him. He could not stand it any longer—he must lie down a minute. Down on the floor he threw himself, and before the watchman could get to him, a full-fledged snore was heard, and he was out of the race.

Cunningham was left alone with a twelve-hours' vigil before him. He walked, he sang, he danced and shouted and tried every means he could devise to ward off sleep. Hundreds of people clustered about him to see the last hour pass. "Why did you stop the clock?" he almost screamed, as the minutes dragged by. At length it was over, and he was conducted to the theater stage and introduced, but before the introduction was over, he was sound asleep. Cunningham lost eight pounds and Townsend six in the match. The men were allowed to sleep in fifteen-minute naps at the conclusion of their several vigils, and were said to have suffered no permanent ill from their novel contest.

What Shall be Done for a Cold in the Head?

It may not be always possible to break up a cold, says the *Boston M. and S. Journal*. Some times during the congestive stage, anything which will allay irritation will suffice. The person who feels a cold coming on should instantly betake himself to bed, drink a cup of hot ginger tea and make use of a snuff like that which was proposed several years ago by Dr. Ferrier:

R.	Morph. sulph.,	gr. i.
	Bismuth subnit.,	3 iij.
	Pulv. acaciæ,	3 i.
M.		

The insufflation of a little morphine at the commencement of a cold in the head is sometimes attended with very happy results. Quinine as an abortant in commencing cold is much in use; the dose should be somewhat large; Dr. T. J. MacLagan says ten grains. Its efficiency is, however, rather problematical. Doubtless, menthol is one of the best local applications in the early stages of a cold in the head. It may be used in the form of an ointment (menthol one part, vaseline thirty parts), or as a spray with liquid albolene. A formula which may do good service is the following: Menthol, one part, liquid albolene, thirty parts. A special spray atomizer, such as is sold by all the instrument-makers, is needed for the effective use of this combination.

Sauce for the Goose is not Sauce for the Gander.

There was once a rich woman who discovered that she was about to become a mother. She did not wish to become a mother, for to do so would put her to some inconvenience and for a short time interfere with her pleasures. So she sent for her physician, who was very noted and respectable. As a result of preventing her from becoming a mother she died. The doctor certified that she died from peritonitis. Her remains were prepared for burial by a fashionable funeral director. Her funeral sermon was preached by a fashionable clergyman. The fashionable doctor attended the funeral. Everybody mourned the death of the estimable Christian woman. Everybody was satisfied. "Because," said they, "whatever a rich woman, a noted doctor, a fashionable undertaker, and a swell clergyman do is all right." There was once a poor cigarette girl, named Annie Goodwin, who discovered that she was about to become a mother. She did not wish to become a mother, for to do so would prevent her from ever making a living, except by a life of shame. So she sent for a doctor named McGonigal. As a result of preventing her from becoming a mother she died. The doctor certified that she died of peritonitis. Her remains were prepared for burial by an undertaker named Merritt. She had no funeral sermon, but was buried secretly. The police heard of it and arrested the doctor, the undertaker, the woman in whose house the cigarette girl died, a little boy, a girl friend of the dead woman, and the girl's lover. And everybody said it was horrible that so many persons should have conspired to murder the cigarette girl. They even wanted to lynch the doctor. "Because," said they, "unless such things are done by a rich woman, a noted doctor, a fashionable funeral director, and a swell clergyman, they are fruitful crimes."—*Twentieth Century*.

Public Baths.

Dr. Simon Baruch, of New York, justly and truly claims that that portion of the community which has the greatest need of bathing have the least facilities for it. Clerks, mechanics, laborers and their families ought at least to have as good opportunities for keeping the skin clean as wealthy people thought was imperative for the health of their horses and other animals. The so-called tenement-house odor, which offends the nostrils of cleanly people in public conveyances, emanates from decomposed secretions of the skin which accumulates upon the body of uncleanly people and in their clothing. It is not only a moral obligation upon the community, but a necessity for the safety of their households, to remove this evil. Above all is it the duty of the city authorities to do so. He would advise the adoption of a method whose simplicity and cheapness should overcome every objection. Its essential principle was the abolition of the tub and the substitution of the rain or shower bath. The bather sat upon an inclined plane, drew upon a chain and a shower of tepid or cold water poured upon him while he scrubbed himself; the soiled water flowed away. The advantages over the tub were: saving of first cost and wear; saving of labor; saving of time, thus accommodating more bathers; economy of space; less danger of communicating disease, etc.

Some Milk Statistics.

The *American Analyst* says that there are \$2,000,500,000 invested in the dairy business in this country. That amount is almost double the money invested in banking and commercial industries. It is estimated that it requires 15,000,000 cows to supply the demand for milk and its products in the United States. To feed these cows 60,000,000 acres of land are under cultivation. The agricultural and dairy machinery and implements are worth \$200,000,000. The men employed in the business number 750,000, and the horses over 1,000,000. There are over 12,000,000 horses all told. The cows and horses consume annually 30,000,000 tons of hay and nearly 90,000,000 bushels of corn meal, about the same amount of oatmeal, 275,000,000 bushels of oats, 2,000,000 bushels of bran, and 30,000,000 bushels of corn, to say nothing of the brewery grains, sprouts and other questionable feeds of various kinds that are used to a great extent. It costs \$450,000,000 to feed these cows and horses. The average price paid to the labor necessary in the dairy business is probably \$20 per month, amounting to \$180,000,000 a year. The average cow yields about 450 gallons of milk a year, which gives a total product of 6,750,000,000. Twelve cents a gallon is a fair price to estimate the value of the milk, at a total return to the dairy farmers of \$810,000,000, if they sold all their milk as milk. But 50 per cent. of the milk is made into cheese and butter. It takes 27 pounds of milk to make 1 pound of butter, and about 10 pounds to make 1 pound of cheese. There is the same amount of nutritive albuminoids in 8½ pounds of milk that there is in 1 pound of beef. A fat steer furnishes 50 per cent. of boneless beef, but it would require 24,000,000 steers, weighing 1,500 pounds each, to produce the same amount of nutrition as the annual milk product does.

Dangers and Damages Due to Factory Whistles.

Dr. J. H. Albee has won a suit for damages, amounting to \$6,000, for a broken leg, which the jury at White Plains, N. Y., decided was chargeable to the blowing of a steam-whistle, belonging to the shoe factory at Chappaqua. Dr. Albee is a Rhode Island physician who had been summering at Chappaqua, in the summer of 1888; one day in July he with a friend was driving near the shoe factory, when the whistle, known as the "seven-mile whistle," was blown; the horse they were driving became affrighted and ran away. The riders were thrown out of the wagon, and one of them, the physician, received a serious fracture of the leg. The injured physician, in this instance, may or may not have been engaged in professional duty when the whistle shrieked, but he has our sympathy in either case, and we hope that his cause is well and finally won, and for this reason: we thoroughly detest and reprobate the use of these life-endangering steam whistles, which disrupt the atmosphere for miles around. These seven-mile whistles serve no useful purpose that is imperatively demanded by trade or industrial pursuits, while they are in many places a daily menace to property on wheels, to limb and life of animals and men, and of the general practitioner in an especial degree. These frightsome noises have no right to exist.

Artificial Feeding of Infants.

Dr. Geo. B. Fowler, in a paper read before the Obstetrical Society of New York, discusses this subject. "All are agreed," he says, "that the important difference between cow's and human milk is the excess of casein that it (the former) contains, and that it forms a too firm and insoluble clot. Hence the various devices designed to modify the solidity of the casein clot, and to adapt cow's milk to the delicate requirements of infants and invalids. I am quite familiar with the methods generally in use for this purpose, but have now come almost exclusively to employ that which it is the object of this brief paper to describe. It is as follows: Put four tablespoonfuls of rice into three pints of water, and boil half an hour; then set aside on the back of the range to simmer during the day, water being occasionally added by the cook to maintain the original three pints. At night strain through a colander and place on ice. When cold a paste is formed. Three tablespoonfuls of this paste are added to each nursing-bottle (half pint) of milk, and fed during the next day, a fresh supply of rice-paste being under way in the meantime. Should there be constipation, I use farina, prepared in the same way, and used in the same proportion. Rice is astringent, farina laxative. From a series of careful experiments with these pastes I am convinced that the hydrated starch granules interpose themselves between the particles of casein, and prevent the formation of solid clots. By this process we do not dilute the cow's milk, but, on the other hand, soften it, and add a constituent carbohydrate, in which, compared with mother's milk, it is weak. No fear may be had but that starch thus treated and administered will be digested by a child of three, or even two months. My success with this preparation has been such that I offer it to the profession with great confidence."

The Use of Money.

Money is absolutely of no use aside from its power to command goods; for debts of all kinds represent property delivered, unless it is those that represent privilege or monopoly that ought not to exist. As a medium of exchange, money is valuable, aside from its functions as a common denominator. We must keep in mind its function as a medium of exchange in arriving at any fair estimate as to the quantity of currency needed. Nevertheless, it would be possible for people to thrive in a community that had not a cent of cash. If all of the people in such a community carried their product to a common store, receiving out of its stock such products as they needed, whether coming originally from their own neighbors, or obtained by the storekeeper through trading for goods in larger markets, there would not necessarily be any hardships, provided the storekeeper was honest and not disposed to abuse the privilege he enjoyed. The advantage that money offers over such a system is, first, that it gives to all concerned a common denominator, and, second, it will command goods wherever presented, and this fact prevents any one storekeeper from so monopolizing the trade of a community that he has its members at his mercy.

Funeral Reform.—Dangers of Decoration Day.

The *Lancet* inveighs against the practice of so conducting funerals as to endanger human lives. The past winter has been unusually chilly and cold in England, and the editor of the *Lancet* has had occasion to notice not a few distressful consequences due to the standing of participants at funeral exercises with their heads bared. In fine weather this mark of respect may very well be observed, but in the winter time it is too liable to be attended with grave risks to be looked upon with favor by medical men. The editor commends the shortening of the outdoor services in cold and stormy weather, as has been voluntarily undertaken by some of the clergy, and the keeping of the hat on the head except for a moment or more at a time when the word "Amen" after prayer, or some like passage, is pronounced by the clergyman. Standing with the head bared is indeed a seemly token of respect to the dead, but a due regard for the living teaches us that a reform in this particular may properly be expected before this century closes. The dangers of Decoration Day deserve consideration here. We hold that it is unfortunate that that holiday has been located so early in the year, while yet the soil of our cemeteries is saturated with damp and unoxidized deposits of a winter's harvest of snow and frost, and mold and vegetable decay. We have seen too many instances of injury to health, and of death even, caused by that kind of filiality and loyalty which leads the families of departed patriots and others to decorate the last resting-places of their loved ones, to be admirers of the practice from the standpoint of health preservation. This act of respect has, in not a few instances, been the occasion of a second visit, soon after, to the cemetery, for the purpose of closing up a newly-made grave due to Decoration Day exposures.

The National Conference of State Boards of Health.

The seventh annual meeting of the National Conference of the State Boards of Health was held in the Ebbitt House, Washington, D.C., April 27 and 29. Dr. J. N. McCormack, of Bowling Green, Ky., presided. An address of welcome was made by District Commissioner Douglass, after which Dr. Cochran, of Alabama, read a paper, entitled "What are the Requisites for a Thorough System of Quarantine and Maritime Sanitation, in the Light of Present Scientific Attainment?" He thought that the port of Havana was the proper place for quarantining yellow fever ships, which nearly all came from Cuba. Next, Dr. S. R. Olliphant, of New Orleans, discussed the questions: "Given a vessel, with cargo, from Central or South America or the West India Islands, can such vessel and cargo be disinfected without discharging the cargo?" and "Can such cargo be disinfected thoroughly and without damage after it has been discharged?" The speaker believed that the best method of disinfection of vessels was by sulphurous acid. Dr. Cochran did not think disinfection of a ship's hold and cargo could be effected in this way. Dr. Salomon, of New Orleans, read a paper on the means of preventing the carrying of infection from one State to another. Dr. Balch then discussed the question, "Should State Boards of Health have control of the sanitary arrangement of all school buildings to be erected within their boundary?" and "What is the best plan to secure such control?" He argued against the direct control of school matters by the State Board. The second session was occupied mainly with the discussion of what boards of health should teach and do to prevent consumption. The election of officers resulted as follows: President, Dr. J. W. McCormack, Kentucky; Secretary, Dr. C. O. Probst, Ohio; and Treasurer, Dr. Henry B. Baker, Michigan.

Apples as Medicine.

Chemically, the apple is composed of vegetable fiber, albumen, sugar, gum, chlorophyll, malic acid, gallic acid, lime and much water. Furthermore, the German analysts say that the apple contains a larger percentage of phosphorus than any other fruit or vegetable. The phosphorus is admirably adapted for renewing the essential nervous matter, lethicin, of the brain and spinal cord. It is, perhaps, for the same reason rudely understood that old Scandinavian traditions represent the apple as the food of the gods, who, when they felt themselves to be growing feeble and infirm, resorted to this fruit for renewing their powers of mind and body. Also, the acids of the apple are of signal use for men of sedentary habits whose lives are sluggish in action, those acids serving to eliminate from the body noxious matters, which, if retained, would make the brain heavy and dull, or bring about jaundice or skin eruptions, and other allied troubles.

Some such an experience must have led to our custom of taking apple-sauce with roast pork, rich goose, and like dishes. The malic acid of ripe apples, either raw or cooked, will neutralize any excess of chalky matter engendered by eating too much meat. It is also the fact that such fresh fruits as the apple,

the pear and the plum, when taken ripe and without sugar, diminish acidity in the stomach, rather than provoke it. Their vegetable sauces and juices are converted into alkaline carbonates, which tend to counteract acidity.

A good, ripe, raw apple is one of the easiest of vegetable substances for the stomach to deal with, the whole process of its digestion being completed in eighty-five minutes. Gefrard found that the "pulpe of roasted apples mixed in a wine-quart of faire water, and labored together until it comes to be as apples and ale, which we call lambes-wool, never faileth in certain diseases of the raines, which myself have often proved, and gained thereby both crownes and credit. The paring of an apple, cut somewhat thick, and the inside whereof is laid to hot, burning or running eyes at night, when the party goes to bed, and is tied or bound to the same, doth help the trouble very speedily and contrary to expectation—an excellent secret."—*Hospital*, London.

The Influence of Weather upon Disease.

It is well known that there is a fixed and definite relation between climate and disease, certain diseases being peculiar to certain climates, says the *Medical Record*. Thus in the colder regions we find most prevalent the diseases of the respiratory tract and kidneys, together with certain fevers, while in warm climes we note diseases of the digestive organs in addition to certain specific fever, distinct from those met with in the northern portions of the earth's surface. In the so-called temperate regions, where it is very hot for a portion of the year and very cold for another portion, we find diseases of both the kinds above mentioned, summer being marked by the prevalence of many of the diseases peculiar to the tropics, while in winter the diseases of the north prevail.

It is natural to conclude, from the fact that diseases are grouped in this manner, that one of the chief causes of their prevalence must be looked for in the thermal conditions of the different zones and of the different seasons in any particular zone. This has been shown graphically by Dr. A. Magelssen, of Christiania, in a recent work entitled "The Dependence of Disease upon the Weather." In a series of charts depicting the temperature curve for different seasons in different countries, he shows that the death-rate for the respective regions rises and falls in direct relation to the temperature. Thus in northern countries, in the Scandinavian Peninsular for example, the mortality is greatest in the coldest part of the year, for the reason that respiratory diseases, to which the majority of deaths in these countries are due, are most frequent at this time, while in summer the death-rate is at its lowest, digestive diseases being comparatively uncommon there. In southern countries, on the other hand, the greatest mortality is from disorders of the digestive organs and from the fevers peculiar to tropical climes, consequently the death-rate reaches its highest point during the summer season. In southern regions the mortality curve coincides with that of the temperature, while in the north it rises and falls inversely to that of the temperature.

It is not only diseases of the digestive and respiratory organs, however, that are thus shown to be affected by the atmospheric changes, but the infectious

diseases peculiar to northern and southern climates respectively appear to be influenced in like manner. Thus in the north the mortality from infectious diseases is greatest in winter, while in the south the opposite prevails, infectious diseases being both more frequent and more fatal during the hot season of the year.

As a result of his observations and studies, Dr. Magelssen concludes that the real basis for the fluctuations of mortality in cold as well as in hot countries is to be found in the temperature changes. Under the influence of a higher or a lower temperature are developed in the inhabitants of the different regions the conditions favoring a greater or a less susceptibility to the action of the specific germs of disease.

A Study of Consanguineous Marriages.

There is a little commune, known as Fort Mardick, on the extreme northern coast of France, where nearly all the inhabitants are related to each other, almost all of them having sprung from four families who settled the place originally. As their neighbors were of a different race and language (Flanders), it is very probable that most, if not all, of the early marriages in the community were among blood-relations, and even now twenty-four per cent. of the marriages are between cousins of not more than two removes. Such a community ought to furnish valuable material for the study of the effects upon the offspring of consanguinity among the parents, and, indeed, the study has been made by Drs. Louis and Gustave Lancry, a reference to which we find in *L'Union Médicale*, No. 24, 1891. These observers found that there had been sixty-three unions of this sort from 1882 to 1886, or more than 24 per cent. of the entire number—a very large proportion indeed, considering that the percentage for the whole of France is less than three. Inquiry was made concerning each of these families, with the result of revealing only two defects in the children. In one family there was a deaf-mute, and in another an idiot. The deaf-mute had lost his hearing at the age of three years, but previous to that time had been able to talk as well as other children of his age. The mother of the idiot had met with a terrible accident whereby she nearly lost her life while she was carrying the child, a fact that would probably have been accepted as a satisfactory explanation of the defect in case the parents had not been related.

The Drs. Lancry also endeavored to learn what effect, if any, consanguinity had upon fecundity. They found that, of the total number of marriages in the commune between the years 1882 and 1886, 10.4 per cent. of the couples were sterile, while 4.3 per cent. had had but one child. Of the consanguineous marriages 16 per cent. were without fruit, and in 7.95 per cent. there had been one child.

As a result of their studies the authors come to the conclusion that the marriage of blood-relations tends to the diminution of the birth-rate, but that it has no prejudicial influence upon the children that may be born in such unions.—*Med. Record*.

Cheap Doctors.

The American degree of doctor of medicine is too cheap. So thinks John H. Rauch, M.D., the able secretary of the Illinois Board of Health. Excepting Belgium this is the only country in the world where the license to practice and the M.D. degree can be obtained with only three years' study. Even could American students learn more rapidly than foreigners, as is often asserted, the former's preliminary education is so much inferior to the latter's that such an assertion applied to medical students becomes erroneous. With many American students the habit of application and of scientific and logical thought is not formed until the medical college is entered. The American degree is also cheap in a pecuniary sense. Here are some of Dr. Rauch's statistics and sensible deductions (*Med. Record*):

The average fees for the eleven London schools are, exclusive of the examination fees, £118 5s.; for the provincial schools, £98. In addition, each student has to pay from 10s. to £5 matriculation to one of the degree-granting bodies; from £1 to £15 for the first examination; from £1 to £10 for the second; from £2 to £15 for the first degree or qualification examination, and from £5 to £15 for the second qualification examination. In some of the colleges in the United States all the fees do not amount to \$200, and in at least one the whole course of study and the diploma can be had for \$138. A careful study of the systems of education in foreign countries shows that a large part of the time and much of the money are spent in acquiring practical knowledge of medicine by actual work in hospitals, and this work is tested by practical examinations, such as are too infrequent in this country. Too often the American graduate attends his first case of labor after he begins practice. Such is not the case abroad. The same is true of other conditions that physicians and surgeons are called upon to treat. The defects in the American system of medical education, then, are: (1) Too little preliminary education, and thus a lack of ability to grasp scientific principles. (2) Too much didactic work by the teachers. (3) Too little clinical work by the students. (4) Too few tests of practical work. (5) Too short a time of actual work and study. Increasing the preliminary qualifications and lengthening the time of study will remedy the other defects, and will kill off the useless and low-class schools.

The Limit of Human Existence.

A community is usually surprised when it is announced that one among them has died at the advanced age of 100 years (says *The Brooklyn Medical Journal*). When, however, the statement is made that some one has passed away at the age of 110, incredulity takes the place of astonishment, and we imagine that a good deal of evidence would be requisite to convince even the most credulous that individuals now exist whose years reach a figure double the three score and ten of the Psalmist. Yet such is the statement made by Dr. Remondino, of San Diego, in a paper recently read by him before the Medical Society of the State of California; and we think that

the evidence submitted by him to substantiate this remarkable statement would be accepted by most persons as conclusive.

At the Indian village at Capitan Grande are several Indian women whose ages are over 130 years. Dr. Remondino quotes Dr. Edward Palmer, long connected with the Smithsonian Institute, as authority for the statement that there lives in Southern California a squaw who is 126 years old, and that he has seen her carry, tied up in a blanket, six water-melons for a distance of two miles. A few miles below San Diego lives an Indian, bent and wrinkled, whose age is computed at 140 years. Although blind, he is still active, and daily goes down to the beach and along the beds of the creek in search of drift-wood, making it his daily task to gather and carry to the encampment a fagot of wood. Still another is mentioned who, although 115 years old, is wonderfully active and a great walker, a fifty-mile trip to the mountain for a bag of acorns, which he packs on his back, being an ordinary matter for the old gentleman. Father Ubach, who is connected with the missions, is thoroughly conversant with the personal habits of all these old persons. He says their habits have been those of strict temperance and abstemiousness, their diet being exceedingly simple, consisting of acorns, flour and water. Dr. Remondino thinks that the climate is an important factor in producing this great longevity. There is in Southern California an almost complete immunity from liver and kidney disorders; no land is so free from lung affections, while rheumatism and malaria are unknown. It results, therefore, he says, that from childhood to old age there are no deteriorating influences to encounter, and green old age is reached with an organism unimpaired and fully able to perform all its physiological functions, which enables the body to prolong its physical existence to that extreme limit, that makes euthanastic death in that climate not only a possibility, but a probability.

The International Congress of Hygiene.

The Seventh International Congress of Hygiene and Demography will be held in London, August 10 to 17, 1891. H.R.H. the Prince of Wales, K.G., will preside. The aim of the Congress is to awaken public interest in the progress of hygiene and demography, by which latter term is understood the study of the life conditions of communities from a statistical point of view; to afford persons interested in these subjects an opportunity of meeting, with the object of advancing their progress; and, by conferences and debates, to elucidate questions relating to hygiene, demography and public health. The governments of all countries, municipalities, county councils and other provincial administrations, public health authorities, universities, colleges and all societies which are occupied in the study of the sciences more or less immediately connected with hygiene are invited to co-operate and appoint delegates to represent them at the Congress. An exhibition of articles of hygienic interest will be held in connection with the Congress. Excursions will be arranged to various places of especial interest to hygienists.

Hints for Housekeepers.

Banana flour is one of the latest novelties in food products.

Kerosene, liberally applied, will soften boots and shoes that have been hardened by water.

Oil-cloths will last twice as long if a layer or two of wadded carpet lining are placed under them.

Use a wire frame for boiling potatoes, and see how much vexation it saves and how satisfactory the result.

Ease tired feet by bathing them in warm water in which a few lumps of salaratus have been dissolved.

Paint, varnish or japan may be softened or easily removed from old surfaces with a solution of caustic acid.

To remove stains of blood, saturate the spots in kerosene and let stand a time; afterward wash out in warm water.

Gas is always objectionable in a sick-room, as it exhausts the air; and in bed-rooms, generally, it should not be used.

To clean a brown porcelain kettle, boil peeled potatoes in it. The porcelain will be rendered nearly as white as new.

Rub your lamp chimneys, after washing, with dry salt, and you will be delighted with the new brilliancy of your lights.

By rubbing with a flannel dipped in whiting, the brown discoloration may be taken off cups which have been used for baking.

When whitewashing your cellar, add one ounce of carbolic acid to each gallon of wash before applying for sanitary purposes.

To keep a closet or pantry dry and sweet, place a small box of lime upon one of the shelves. It will absorb all dampness.

Keep cranberries fresh by putting them in water in which a piece of charcoal has been placed. Change the water occasionally.

A tickling in the throat can be cured by placing a pinch of dry, pulverized borax on the tongue and allowing it to slowly dissolve.

If you wish to keep a kitchen knife particularly sharp, never put it in grease. Stir and turn greasy cooking with an old, broad-bladed butcher-knife or common, dull case-knife.

An uncomfortable, tight shoe may be made easy by laying a cloth wet in hot water across where it pinches, changing as it cools several times. During the process the leather will shape itself to the foot.

Morning Headache from Overwork.

Dr. Wm. Browning, after giving a series of illustrative cases, thus summarizes in the *Brooklyn Medical Journal*:

(1) A history of tire and exhaustion from prolonged and overwork, often, also, in part from short hours of sleep and a "run-down" condition of whatever origin.

- (2) The common occurrence and greatest severity of the trouble on waking.
- (3) Its improvement on gentle exercise, or on taking a hot, stimulating drink; sometimes growing worse again later in the day.
- (4) Its frequent and daily recurrence.
- (5) Its dull, non-throbbing, non-neuralgic character.
- (6) Any part of the head may be involved, though oftener the frontal.
- (7) The person sleeps with the head low.
- (8) Sleep comes easily, is deep, and is rarely disturbed by dreams.

As to the other symptoms, dizziness on sudden rising, nausea, etc., may or may not be troublesome. Though only occasionally there are points about the head tender to pressure, yet, as in many chronic headaches, there may be a number of fixed or constant points about the cranium that are exquisitely sensitive to even a very gentle faradic current.

Treatment must correspond to the cause. Usually this can be remedied, and then the prospect of relief is excellent. Recreation (rather than full rest) is often more important than drugs. In younger people, feeding, iron and general tonics do good.

Physical Health of School Children.

The School Board of Lewiston, Maine, deserves special commendation for its watchful care of the physical health of its pupils, while pushing their intellectual training as rapidly as is prudent. Dr. C. E. Norton was employed to examine the eyes of the scholars. He found a somewhat steady rate of increase in myopia (shortsightedness) from the lower to the higher classes. When eye troubles were found the parents were notified, and many expressed their satisfaction with this new work.

We take pleasure in quoting the following from the Report of the School Committee, says the *Sanitary Inspector*: "It is the intention of the School Board to guard, as much as possible, the health of our school children, compelled by law and custom to attend school so many weeks every year. The teachers are instructed to be always on the alert to detect diseases in their incipency. Children are sent home if they have any appearance of illness. Our large schools have thus been protected from interruptions by the spread of contagious diseases. The school-rooms are thoroughly cleansed at the end of every term. Disinfectants are burned, and the casings, desks and floors thoroughly washed with corrosive sublimate. Most of the janitors take pride in keeping the rooms in their care neat and tidy. It is worthy of mention that one of our faithful janitors, a few days ago, exultingly challenged any member of the School Board to find a cobweb, or even dust sufficient to soil a white pocket handkerchief, in any room which he had this season in the large school building under his care."

A world's fair in commemoration of the four hundredth anniversary of the discovery of America, will be opened at Rio de Janeiro, under the auspices of the Brazilian Government, in November, 1892.

One Cause of Typhoid Fever.

An outbreak of typhoid fever, somewhat curious in its origin, occurred in one of the English sanitary districts. The excreta from two cases of typhoid fever had been thrown into an ashpit. Subsequently, some decayed fruit was thrown upon the same ashpit. This fruit was discovered by the children, who were all associated as playmates, and distributed and eaten by all of them. Seventeen cases of typhoid appeared among these children, whose ages ranged from 3 to 14 years.

Breeding Bacteria.

Professor Koch has been making experiments respecting the influence of sunlight upon the growth of germs. The results are very significant, showing very clearly the important relation of sunlight to health, especially as a disinfectant. We quote a portion of his remarks as follows: "As to direct sunlight, it has been well known for some years that it kills bacteria with tolerable quickness. I can affirm this as regards tubercle bacilli, which were killed in from a few minutes to some hours, according to the thickness of the layer in which they were exposed to the sunlight. What seems to me, however, to be particularly noteworthy is that even ordinary daylight, if it lasts long enough, produces the same effect."—*Times and Register*.

Good Advice.

If your watch is out of order you do not fuss with it till it goes, but send it to a watchmaker; but too many people, when their infinitely more delicate bodily machinery is out of repair, think they are fully equal to the task of setting it right again. They are the undertaker's best friends. Whatever else you do, don't employ any physician who advertises. There is nothing criminal in advertising, but, by common consent and agreement, all reputable physicians leave such methods of business to the traveling quacks, mind healers, "Indian" physicians, medical institutes, and a thousand and one other forms of ignorance and rascality which prey upon a long-suffering people. The so-called regular physicians are not omniscient or omnipotent, but they know more about disease than anybody else, and will do all that anybody can to cure you. Don't read medical works unless you are prepared to have all the different diseases therein described. It takes a strong mind to read a minute description of any disease without discovering some of the symptoms in himself. The quacks know this well, and their so-called "medical" books consist principally of descriptions of every imaginable symptom appended to the most painful and fatal diseases. Remember that if you think you have undoubted symptoms of Bright's disease, consumption, insanity or paralysis, you probably haven't a trace of any such disease about you. The favorite prescription of a very successful physician was "to be a little lazy." This remedy ought to be used with judgment. He once recommended it to a government official; but with most people diet, rest and quiet are the best possible means of cure, and a change of occupation is usually better than a total cessation of activity.—*Popular Science News*.

Blind Men and Smoking.

It is said blind men never smoke, and that when men who have been in the habit of smoking go blind they soon cease, saying it gives them no pleasure to smoke when they cannot see the smoke. We wonder whether facts bear out this statement.

A Very Commendable Fashion.

Occasionally Fashion—so called—has the credit of leading the susceptible mind into channels where Health and Vigor follow. This is the case—this is the leading—at present in regard to hot milk as a popular beverage. If only the temperance disciples could fully awake to the golden opportunity this “fad” opens!

Hot milk is a wonderful food and stimulant. It combines these two virtues most happily, more so, probably, than any other one substance, or combination of substances. National degeneracy need hardly be feared from the universal consumption of hot milk as a constant drink. We can see but one danger in this direction, and that we believe will be fully overcome by having the temperature of the milk, in all cases, carried to the boiling point.

Immigrants and Disease.

The lunatics and diseased persons sent back to Europe from the State of New York during the last seven years numbered, in all, 1,374. The *New York Times* has compiled an interesting table, showing the condition of those “returned with thanks.” It is as follows:

	1884	1885	1886	1887	1888	1889	1890
Total number	114	152	175	216	323	229	165
Lunatics	11	10	19	25	14	10	8
Imbeciles	19	21	24	26	26	6	7
Feeble-minded	34	78	33	52	91	62	33
Vagrant and diseased	7	13	18	27	87	42	29
Decrepit	8	5	23	10	29	31	10
Cripples	9	9	8	21	13	12	15
Blind	3	2	3	8	4	5	..
Epileptic	2	1	9	7	8	8	5
Paralytic	2	1	..	5	3	3	3
Deaf-mutes	1	..	..	3	..	..	..
Otherwise infirm	18	12	38	32	48	50	46

Medical men have occasion to know that but a small percentage of the diseased and dependent classes are returned to their homes. One-third of our insane are foreign-born, as is also over one-half of our dispensary and hospital population.

By far the largest proportion of this useless and expensive increment comes from Germany, Austro-Hungary and Poland, though Russia and Italy have of late been greatly increasing their quota. Immigration furnishes physicians a rich field for pathological study, but it is unremunerative to the profession and expensive to the community.

Ripe Tomato Pickles.

Puncture tomatoes with a darning-needle. Put a layer of tomatoes in a jar with chopped onion, sprinkle with salt, and continue alternate layers of tomatoes, onions and salt until the jar is full. After this has stood a week, drain and press the salt water from the tomatoes. Cover with vinegar, into which has been stirred ground mustard, pepper, salt, mace, cinnamon, spice, celery seed and sugar.

Summer Drinks of the Moguls.

A medical journal of India referring to the Moguls, who for luxury have had no equal in Indian history, thinks their customs as regards summer drinks might be adopted with advantage by other peoples. Their drinks consist of milk, sweetened waters, or sherbets, prepared from subacid fruits, such as lemons, tamarinds, pomegranates, etc., flavored with rose or Keora essences, date juice, numerous vegetable tisanes, and some infusions of glutinous seeds flavored with sugar and essential oils. These were often cooled with ice collected in pits, where it was stored during the winter months. The Oriental races, it is asserted, suffer from few of the diseases which are common to the copious meat-eating and wine-drinking Europeans. For a hot day, a light vegetable diet is recommended, with a spare quantity of meat food and an abundance of cooling, non-alcoholic drinks.

The Dwelling-House in Relation to Consumption.

In an article on this subject, in *The Practitioner*, Dr. R. Thorne summarizes the conditions of dwellings tending to the promotion and to the prevention of consumption as follows:

Conditions tending to the promotion of consumption.

- (1) A soil either (a) naturally damp and cold, or (b) subject to the influence of the rise and fall of a subsoil water lying within a few feet of the surface.
- (2) A dwelling-house of which either the foundations, the area they inclose, or the walls, are, by reason of faulty construction or otherwise, liable to dampness.
- (3) Such immediate surroundings of the dwelling-house as tend to prevent the free movement of air about it, and its ample exposure to the influence of sunlight.
- (4) Such structural defects as would prevent the maintenance within all parts of the dwelling-house of ample movement of air by day and by night, and free exposure of its habitable rooms to daylight.

Conditions tending to the prevention of consumption.

- (1) A soil which is dry (a) naturally, or (b) freed by artificial means from the injurious influence of dampness, and of the oscillations of the underlying subsoil water.
- (2) A dwelling-house so constructed as to be protected against dampness of site, foundations and walls.
- (3) Such open space on at least two opposite sides of the dwelling-house as shall secure ample movement of air about it, together with its free exposure to the influence of sunlight.
- (4) Such construction of the dwelling-house as will secure for its habitable rooms and throughout its interior free movement of air by day and by night, and the free access of daylight.

A Note on Mental Hygiene.

In her book on "Education from the Cradle," the Russian Princess Oourousov gives the following salutary caution against leading children to think about themselves too much:

"Generally speaking, nothing is more disastrous than are remarks on ugliness, stupidity, beauty and intelligence. The only remarks allowable are those which concern the personal actions, and they should never be made about anything outside the province of the will, such as the appearance and the intellect. Such remarks lead to too much introspection, and make a merit or a crime of what is beyond the child's control. We ought rather to occupy his mind with something which can take him out of himself. By observation, laudatory or the reverse, we develop presumption in some and morbid anxiety in others."

A Dangerous Habit.

As we were coming down Sixth Avenue on the electric car, a few days since, we noticed an aged and infirm colored man, who was seated opposite, take from his mouth a silver "quarter," covered with saliva. He rubbed it on his pants, turned it over, rubbed the other side and handed it to the conductor to pay his fare. Now, as he was enfeebled by age, he was peculiarly liable to contract some infectious disease, had the money been in the mouth or hand of some one so diseased. We noticed, also, that he had very badly-decayed teeth, covered with tartar, which, doubtless were the habitat of bacteria, some of which may have been disease-producing. There is no telling what delicate lady's mouth this same "quarter" may have gone into that same day. Now, some of the pathogenic or disease-producing germs are exceedingly tenacious of life. They will bear freezing or drying, and may preserve their vitality for months—even for years. We don't wish to cast any reflections upon the fair sex, but for some reason or other, ladies, much more frequently than men, make pocket-books or purses of their mouths, since it is not the fashion to have pockets in their dresses. We suggest that it is neither elegant nor safe for a lady to subject her mouth to such vile usage.—*Monthly Bulletin of the Iowa State Board of Health.*

State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania.

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PLACE OF MEETING,
Supreme Court Room, State Capitol, Harrisburg, unless otherwise ordered.

TIME OF MEETING,
Second Thursday in May, July and November.

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COMMUNICATIONS.

Public Health and Municipal Government.*

BY JOHN S. BILLINGS, M.D.,

U. S. Army.

FOR the last forty years the cities of the United States have been progressively increasing in population faster than the rural districts. During the ten years from 1880 to 1890, the total population of the United States increased 24.57 per cent., while the number of persons living in cities of 10,000 inhabitants and upward increased over 48 per cent. The proportion of the total population living in such cities in 1880 was 23.26 per cent.; in 1890 it was 27.89 per cent. The proportion of persons residing in such cities is greater in the North Atlantic States, where it is now 48.83 per cent., or nearly one-half of the whole population. In Massachusetts over 70 per cent. of the people live in such cities; in New York, 58 per cent.; in Rhode Island 57 per cent.; in New Jersey, 50 per cent.; in Pennsylvania, nearly 39 per cent. The smallest proportions of urban population are found in the Southern States; thus, in Mississippi it is less than 2 per cent.; in Arkansas, 3 per cent.; in North Carolina, 3.3 per cent.; in Alabama, 5 per cent.; in South Carolina, 6 per cent.; in Georgia, 9 per cent., but in all these States it has also increased.

This rapid increase in cities is due mainly to immigrants from foreign countries, and to migration from the rural districts to the cities, and not to excess of births over deaths; for death-rates are much higher in the cities than they are in the country and in small villages, and this is one reason why the rate of increase of the total population of the United States has been less for the past ten years than it was for previous decades.

The effects of city life upon the health and vitality of those subjected to it form an increasingly important subject for investigation and study, not only by the physician, sanitarian and philanthropist, but by business men, politicians and sociologists.

* Abstract of an address before the American Academy of Political and Social Science.

The aggregation of large bodies of men in limited localities has many advantages ; it concentrates force, stimulates and makes possible the doing of many things conducive to human happiness and progress which would not be done in a scattered community, and is a necessity for the progress of civilization.

When the dangers to health in such aggregations were far greater than they are to-day ; when the average duration of life of the city dwellers was fifty per cent. shorter than, and their death-rate double that of our most unhealthy towns, there were great cities to which, as now, the young, the ambitious, the energetic, the best of the race, flocked to seek the pleasures, prizes and rewards which they knew might be found there, and there only, although they also knew that they risked their lives in doing so. And the reason for this is that men feel that health is not an end, but a means. Its value is great to the individual, because it enables him to obtain and enjoy, but it is of small value if the person possessing it is isolated from his kind. When the human machine has given way at some point, when the stomach, or kidney, or heart, or brain no longer performs its proper work without producing pain or consciousness on the part of its owner, the point of view changes somewhat, but it requires very considerable and continued suffering to induce most men engaged in active business to give this up and devote their attention to avoiding pain instead of seeking pleasure. Every physician in active practice is familiar with the astonished, incredulous, and slightly-offended aspect of the man who comes to him for a prescription for a little dyspepsia, or hoarseness, or dizziness, or numbness, and is told that this is the beginning of the end, and that henceforth he cannot follow his favorite habits and pursuits if he wishes to preserve his life. And this is true to a certain extent of communities as well as individuals. It is hard to persuade a city that it is ill, or in danger of being ill, so long as the trade-pulse beats strongly and clearly, and still harder to induce it to submit to any treatment which may slacken this pulse even temporarily.

There is almost always room for doubt as to whether the case has been diagnosed correctly ; whether the doctor is not an alarmist who would like to obtain, and retain, a paying patient ; whether the suggested change cannot be deferred for a month or two, or a year or two, without much additional risk.

In all large cities there exist a number of people who are very poor, who, as a rule, do not get enough to eat and are insufficiently clothed, and among these there is a distinct class of people who are structurally and almost necessarily idle, ignorant, intemperate, and more or less vicious, who are failures, or the descendants of failures, and who for the most part belong to certain races.

These people congregate in certain quarters and in certain houses which, are adapted to their means, tastes, and habits ; they huddle together in foul rooms ; they include the loafers, the street arabs, the tramps and casuals ; their poverty is the result of intemperance and indolence dependent on physical structure, and if the evil results were confined to themselves there would be little use, from the commercial point of view, in attempting to improve their condition. If we consider them alone, we are tempted to say with Carlyle : ' Let wastefulness, idleness, and improvidence take the fate which God has ap-

pointed them, that their opposites may have a chance for *their* fate. He that will not work according to his faculty, let him perish according to his necessity."

But we must look after these people, and help them, for the sake of others, if not on their own account. When diphtheria prevails in a tenement-house many school children are in danger, and the most perfect plumbing in a house affords little protection against the entrance of this disease if it is prevailing in the vicinity. Typhus and smallpox do not confine their ravages to the vicious and foul after they have acquired malignancy among them.

Mingled with those who might not be worth saving on their own account is a much larger number of honest, industrious, and fairly intelligent and energetic poor people, who live by day's wages, and are struggling against their surroundings to improve their condition, and especially to give their children a fairer chance in the race for life than they themselves have had. These last are the people whom it is worth while to help for their own sake, while attempts to improve the condition of the others are, as a rule, chiefly beneficial to those who make such attempts. Great numbers of the incompetent, vicious, idle, deformed, or starved-brain class have been poured into this country by immigration during the last fifty years, and have filled our slums and tenement-houses, our hospitals, asylums, almshouses and jails to overflowing. They cannot escape the results of their physical organization, which, in its turn, is an inherited result of ancestral degeneration. For them we may "hope 'the best, but hold the present fatal daughter of the past.'"

Their death-rates are from two to three times as great as those of the better class of population; one-fourth of their sickness is treated by charities, and one-third of those who die among them are buried at public expense. The districts in which they live require a large proportion of the work of the city officials, inspections, removal of nuisances, police, the courts, etc., and, on the other hand, they contribute but little to municipal or other taxation. All this is well known, but we have not yet arrived at the stage of applying efficient and systematic prevention, which is perfectly possible, and are still pottering with the so-called remedies which are of little use.

In these districts the deaths usually outnumber the births, so that if it were not for a continued stream of new recruits, this population would diminish. How can accession be prevented? One way is to get rid of, and prevent additions to, the kind of dwellings which these people seek. Do you say that they must live somewhere, and that there must be such places for such people? I do not think so; it is not necessary that any city should allow the existence of such houses within its limits, and if their destruction forces some persons into almshouses and drives others away it will be cheapest and best in the end.

Philadelphia has been peculiarly fortunate in the fact that the great majority of the families of her working-classes have each a separate habitation, the average number of persons to a dwelling having been, in the tenth census, only 5.79, while in Baltimore it was 6.54, in Boston 8.26, in Cincinnati 9.11, and in New York 16.37.

This good fortune does not consist merely in the fact that these small, separate houses are healthier and more conducive to morality than tenement-houses, but also in that they show that there is a more intelligent and industrious class of people here than elsewhere, since the demand creates the supply.

We must have the data for the so-called unavoidable, as well as for the avoidable, or preventable causes of disease, partly because, with the rapid advances in knowledge, what seems unavoidable to-day may be quite within our power to prevent to-morrow, and partly because we have to estimate the one before we can come to any accurate conclusions with regard to the importance and influence of the other. Take, for instance, the influence of temperature, moisture, and pressure and movement of the air which make up the complex which we call "the weather." The weather exercises a powerful influence on health, especially in infancy and old age, and this influence is, to a great extent, especially for the poor, an unavoidable one.

Let us now briefly consider a few variables affecting the health and comfort of citizens over which the city corporation has chief or exclusive control, and for the existence and condition of which it should, therefore, be held to a corresponding amount of responsibility. These include such matters as water-supply, sewerage and drainage, streets and pavements, including means of rapid transit, parks and open spaces, lighting, provision for the dead and for those affected with contagious disease, the sale of improper food and drinks, etc.

"The needs of the inhabitants of a large city are varied and multifarious, many being almost unknown to the farmer or small villager. The place produces nothing; the food, fuel, water, etc., must be brought to it, and the refuse must be taken away.

"Some of these needs, such as those for food, fuel and clothing, can be best met by ordinary business competition, and the only thing required from the State or municipality to aid in the matter is that abundant means of communication with the rest of the world are provided, and that the rights of property are maintained.

"With regard to the supply of such articles as water, gas, or electricity, the case is different. These articles are to be brought to, and into, every house through special pipes or conductors in the streets, which must be disturbed for the purpose of laying or repairing them."

They are articles which are needed, not only by each individual for his own convenience, but by the community as a whole to preserve health and to insure security to life and property. To furnish them in sufficient quantity and of good quality requires a large and costly plant, usually at first in excess of the actually existing requirements, in order to provide for the future growth of the city. If they are furnished by free competition, special nuisances and dangers in connection with the public streets are produced, and the cost of production is necessarily increased. For these and other reasons it is now generally admitted that the supply of water and gas should be monopolies, and that in the immense majority of cases these monopolies should be owned and managed by the city, and many persons, myself among the number, think that the same is true with regard to electric light plants and street railways.

Many of the variables which I have indicated as being especially under municipal control have a powerful influence on the health of the people, and a large part of the discussions as to the best way to arrange and manage these, or as to whether in any particular place at a particular time the municipality is doing its duty with regard to them, turns on sickness and death-rates.

It should be borne in mind, however, that no sharp dividing line can be drawn between comfort and health; that there are many things, such as noise, dust, offensive odors, rough streets, etc., the influence of which upon sick- and death-rates it would be at present difficult or impossible to demonstrate, at least to the satisfaction of a court of law, and yet which do add materially to the burdens of life of those who are subjected to them, and may in some instances turn the scale between life and death. The human body in some diseases may be likened to a heavy railway train going up a very steep grade. If the fire under the boiler can be kept bright and clear, if the fuel and water hold out, and the engineer is skilled and careful to get the benefit of every pound of steam-power developed, then the train will just reach the top of the hill, *provided there are no little pebbles on the track.*

It is always difficult, and usually impossible, to obtain evidence that is satisfactory, from a legal point of view, to prove that the offensive odors from a bone-boiling establishment, or the emanations from a cesspool, or the water from a polluted well, have produced such a definitely injurious effect upon the health of those within the sphere of their influence as to justify municipal interference with vested rights in property, or the exaction of damages for sickness or death produced by them. This has heretofore been due largely to the want of definite and precise or, in other words, of scientific knowledge of the causes of disease and death.

So long as our sanitarians could talk only vaguely about contagion and its mysterious connection with filth, so long it was possible to meet their denunciations of particular collections of filth with the reply that there was no evidence that many similar collections, and these collections in particular, had done so much harm as to justify much expense in removing them. Attempts to compute or estimate the cost in money to a given community of an excessive amount of sickness and death occurring in it usually have little result in convincing the public that there is any necessary connection between the two, unless, indeed, in the case of a great epidemic.

For example, the annual death-rate of Philadelphia ought not to be as great as that of London, which is about 20 per 1,000—indeed, I think it is safe to say that with a constant pure water-supply, good sewerage, and clean and smooth streets, this rate should not exceed 18 per 1,000. During the last five years its death-rate has been 22.5 per 1,000, which means that there have been each year over 4,000 deaths and 7,000 constant cases of sickness which were unnecessary.

Allowing \$25 as the cost of each death for funeral expenses, and \$200 per year as the cost of medicines, medical attendance, food and nursing for a sick person, we find that about \$1,500,000 were lost to the citizens in this way each

year, without counting indirect damages due to loss of labor, etc. But the reply to this may be that the money did not come out of the municipal purse, but mainly from the pockets of individual citizens, being in the form of an indirect tax, the direct loss to the city being only \$100,000 or \$200,000. I will not stop to argue this question, or to show that the individual loss in this case is, to a great extent, a municipal loss, but will pass on to the question—if heavy death-rates indicate heavy sickness and heavy demands upon the public purse, and if pure water-supplies, good sewerage, clean and well-paved streets, etc., are known to be among the best means to diminish sickness and loss of life, and to make a city attractive as a place of residence and for the transaction of business, and the cost of these things can thus be shown to be a good investment for the city from a purely commercial point of view, why is it that it is so difficult to get this work done in many of our cities?

The answer to this question lies in the domain of political and social science, which is the special province of this Academy. Speaking broadly, it is because those who have the power to initiate and carry out the measures required to obtain the money and to execute these municipal engineering works, do not think that it would be to their personal and political advantage to do so. What they conceive to be their interests lie in quite different directions; their main business is to find employment and wages for some of their friends and to protect the interests of others, in order to control votes in the State and National elections, as well as in those for municipal offices. The majority of the voters whose good-will they especially wish to secure are not owners of real estate or, indeed, of much property of any kind, unless it be liquors; nor are they specially anxious to secure well-paved, sewered and lighted streets, or properly-constructed houses for other people; in fact, many of them suppose that their interests are rather opposed to these things than otherwise, although this is not really the case.

It should be remembered that the requirements of a city as regards public health and comfort must be considered in connection with its other needs. Its means are limited, and the business of the officials is to apportion these to the several requirements as wisely as possible.

The fact that it can be shown that certain changes would probably diminish the amount of sickness and the number of deaths in a part of or in the whole city, does not make it the absolute duty of the officials to make these changes, regardless of cost, or of their effect on other interests. But no one can doubt the folly of spending large sums in the adornment of public buildings, and, as a consequence, failing to maintain good sewers and clean streets. What is criminal extravagance at one time may be proper expenditure at another.

In the *Forum* for last December, Mr. Andrew D. White commences a paper on the government of American cities by saying that "Without the slightest exaggeration we may assert that, with few exceptions, the city governments in the United States are the worst in Christendom—the most expensive, the most inefficient and the most corrupt." It is a strong statement, but it is true, so far as municipal engineering work is concerned, with regard to several of the

largest cities in this country. I can certify of my own knowledge that it does not now apply to the city of Washington, where the engineering work upon the streets and sewers has been of late years good and economical. The citizens of Washington have no votes for any offices, National, State, or municipal; they are taxed without direct representation, and they are governed by three commissioners selected by the President. There is no city in the world which has a less costly system of municipal administration in proportion to the work done. The money collected from the taxpayers is expended for the improvement and benefit of the city with the least possible deduction for the benefit of officials.

President White's view of the causes of the defects of which he complains is that our cities are managed as if they were political bodies, whereas they should be considered as business corporations, and should have nothing to do with general political interests; that the questions of a city should not be political questions. This also appears to me to be true, and Washington is the only city in this country which is managed in this way, although it is the rule as regards foreign cities.

In the same number of the *Forum* in which President White's article appeared is a paper by Mr. W. M. Springer, entitled "City Growth and Party Politics," in which he comments on the increased political power which our cities will gain by reason of their more rapid increase of population, giving them greater representation in the State Legislatures, and thus greater influence in the United States Senate; and this is also true.

The business of dealing in votes, of procuring them as cheaply as may be, of keeping them aggregated for use in a good state of preservation without risk of fermentation or spontaneous combustion, and of using them or bartering them for profit, is becoming an important industry in this country, especially in the large cities, and our city officials are in the center of this branch of trade. It is not usually a cash business, but more frequently a form of exchange—exchange for offices, for licenses, for protection for gambling-houses, saloons, houses of ill-fame, dwellings unfit for habitation, and for dangerous and offensive trades; or for contracts for public work, for advertising, for news, etc.

The commission dealers in these things are not all unscrupulous villains; many of them are honest and reliable in their dealings in all other matters, and are liberal citizens and good fathers and husbands, but in political matters they have a code of morals and of etiquette which is somewhat peculiar, and which causes them to view many questions connected with municipal administration in a totally different light from that in which they would consider them if they related to their own private business only. They do not obtain their power to control votes for nothing; they have to work for it, to know their men, to be on the watch for opportunities to do them little kindnesses, and to prevent legislation which will interfere with their control of the votes which they regard as their own property fairly acquired. It is especially important to their business that personal rights and property rights shall be provided for by the

same officials, elected by votes of the whole community, and that the National, State and municipal elections shall be held at the same time. The fact that, while personal rights are equal, property rights are very unequal, is one which it is not to their interests to recognize so far as the ballot is concerned.

The small dealers in votes—the local bosses—the men who manage the primaries, often make great mistakes in the way they dispose of their property, for they do not see that they could get much more for it than they do, and they do not understand that for all the free drinks or small offices that they get they must pay the full share of the cost. The burden of the waste of the funds of a city does not fall exclusively, or even mainly, upon capitalists and property-owners, but on the daily wage-earners, and this burden consists not only in higher prices for shelter and food, and in diminishing opportunities for work, but in sickness of themselves and of their families, in the loss of the health which is necessary to enable them to earn their subsistence. The man of means can give his children a chance to form sound bodies by giving them some months at least in the country every year; but the laborer's children must breathe the impure air of foul streets and alleys without ceasing. The healthfulness of a city is far more important to the poor than to the rich, but they never think of this in disposing of their votes.

The remedies for the defects in our systems of municipal organization, and for the comparative indifference of city aldermen and councilmen to many conditions which affect comfort, health, and life, are, for the most part, not within my province to discuss, but I will briefly refer to one or two points connected with this matter.

The first is, that laws and ordinances are merely formal expressions of opinion, unless they are sustained and carried to their legitimate conclusions by the executive officials and the courts, and that the action of these last is greatly controlled by public sentiment, which last depends on the amount of knowledge which the public possesses as to what is really going on.* This information is not always to be obtained from official sources, and hence the importance and utility of voluntary organizations of public-spirited citizens for the purpose of educating the people as to what is and what ought to be. Such citizens' associations exist in several of our large cities, Philadelphia included; they have done much good in the past, and have a wide field of usefulness in the future. One of their functions is that referred to in a recent number of the *Nation*, in which attention is called to the need of a Society for the Systematic and Continuous Prodding of Delinquent Officials, which is to do its work with the greatest and most persistent publicity possible. It is true that we have abundance of public criticism of our officials, but experience has taught us that so much of this is made without proper investigation, and from motives that have nothing to do with public interests, that it has comparatively little influence. The remark of one of the characters† in a recent novel expresses the feeling of

* "Law is the formal expression of the habits, customs, and ideas of a people. Every person is presumed to know it."

† Dr. Claudius, by F. M. Crawford, New York, 1883, p. 175.

many on this point, viz., "The social and municipal economy of New York consists in one-third of the population everlastingly protesting against the outrageous things done by the other two-thirds. One-third fights another third, and the neutral third takes the fees of both parties. All that remains is handed over to the deserving poor."

The second point to which I will allude is the need for more definite and precise knowledge as to the causes of disease, and the relations which they have to circumstances which may and should be controlled by the community as a body, and not be left to individual action.

The more clearly and certainly we can show that a certain outbreak of disease or the persistent unhealthiness of a certain locality is due to definite and remediable causes, the more certainly will municipal officials be induced to act. It is true that they forget with a velocity and completeness which increase as the square of the distance; for example, during and immediately after a smallpox epidemic the vaccination of children in the public schools will be carefully looked after; but when five or ten years have elapsed without an outbreak the officials grow lax. There is now no need of much interruption to commerce on account of cholera, because we know the cholera organism, can tell whether it is present, and know how to destroy it; while we have to be more careful with ships coming from yellow fever regions in warm weather, because we do not know the germ, and must suspect everything; and we have nothing to say as yet with regard to *la grippe*.

Clear and precise information as to the condition of the people and of their surroundings in different parts of a city is especially desirable. It is not an abstract but a concrete problem that is to be solved—*i. e.*, is every part of the city in such condition and so occupied that its inhabitants are not in danger themselves and not likely to cause injury to the persons or property of others? This information should be comparatively continuous, and the results should be demonstrable not only to the professional expert, but to the average citizen. If there is anything wrong, What is it? Where is it? What is the remedy? And what will the remedy cost?

The essential foundation of this knowledge is the registration of deaths and, as far as possible, of diseases, by comparatively small units of areas; by wards, by portions of wards, and in some cases by blocks, or even by single houses. Most of our cities now have a registration of deaths, and a few have a registration, though an imperfect one, of certain forms of contagious disease, such as smallpox, diphtheria, typhoid fever, etc.

It is not possible to have a general registration of sickness, but much might be done in this direction through agencies of which the municipality has the control. For example, all cases of disease treated by public charity, physicians of the poor, free dispensaries, etc., should be reported daily by street and number, and nature of the disease, to the Health Department. All cases of sickness among school children and teachers in the public schools should be similarly reported. The data thus collected should be the guide to continuous inspections and investigations by the health officials.

This means that a sufficient force of skilled men are to be employed. A sanitary inspector whose sole idea is that filth is dangerous, that filth is matter which looks and smells unpleasantly, and that if he finds some such matter in the vicinity of a sickly neighborhood his mission is accomplished, is not likely to be of much service.

Bearing in mind the character, ideas, and purposes of municipal officials, and of those who make them, how is it possible to obtain for, and retain in, the service of the city a sufficient number of skilled men for this work? This question is one of practical politics, and as such I commend it to the attention of the Academy.

But there is need not only of the fullest information which can be gained from statistics and inspections, but of information which can only be obtained by experimental investigation, by scientific study.

Our knowledge as to certain causes of disease has increased greatly within the last ten years, and, which is much more important, we begin to see how this knowledge may be increased. It is true that to do this requires much time and labor—labor which must be highly skilled, and must have for use elaborate and costly apparatus, and rooms specially fitted and adapted to the purpose; but now that the utility of these things has been demonstrated, they are sure to be forthcoming. There are now half a dozen laboratories in Europe specially built and fitted for these investigations, and soon there will be one here in Philadelphia, while others are sure to follow. These laboratories are not municipal institutions, nor is it desirable that they should be under municipal control; but their work bids fair to be of great practical importance to our cities, and they should be a matter of special interest to all public-spirited citizens. We must admit that the laboratories and apparatus are less important and easier to provide than the brains which are to use them to good purpose; but they tend to develop these brains, they are centers of attraction to the men who love this work, they are a powerful stimulus to, as well as an indispensable means for, the patient, careful, long and continued investigation which is so necessary to produce reliable results.

The value of an institution properly equipped for research and for the diffusion of knowledge cannot be estimated directly in money, because its possibilities depend on the men who use it. You may, however, form an idea as to these possibilities if you will reflect upon the probable money value to Germany and to the city of Berlin of the fact that Koch lives there and has done his work there.

It is true that all laboratories do not develop men like Koch; the sequence of events is usually rather in the opposite direction; but it is also true that without the German laboratories there would have been small chance for Koch's full development.

There is an old story of the capture of a fortified town held by a foreign garrison. The citizens were numerous, but they had no weapons. One day a large number of bundles of faggots were brought in through the gates and delivered to one of the popular leaders, with a scrap of paper on which was written

“non eget arci.” He did not understand the message, but he received the faggots, and when he was alone examined them. Every faggot contained half a dozen long iron-tipped arrows. Then he understood the message, *“non eget arci”*—“the bows shall not be wanting.” They came a few days later—smuggled in loads of hay—and the fitting together of the arrows and bows gave the citizens the means of obtaining liberty.

So, also, with the splendid gift recently made of a specially constructed and well-fitted laboratory of hygiene—a gift not merely to the University of Pennsylvania, but to the city of Philadelphia and to the whole country.

I hope and believe that the power required to move this machinery in the right direction and with sufficient force will also come and grow; that the bows for these arrows will not be wanting, and that the result will be increase of knowledge, improvement of method and the training of men specially fitted to deal with the complicated and difficult questions involved in the relations of public health to municipal government in our rapidly growing cities.

Precautions Against Scarlet Fever.*

SCARLET fever (called also *scarlatina*, *scarlet-rash*, *canker-rash* and *rash-fever*) is a highly contagious and infectious disease, to be dreaded more than small-pox, for it cannot be prevented by vaccination, and its victims in our country are far more numerous than those from smallpox. Those recovering from scarlet fever are often left with great physical defects, such as blindness, deafness, paralysis and impaired minds. Scarlet fever and diphtheria are justly dreaded as the most terrible diseases of childhood. It is, therefore, highly desirable that every one should understand the nature of this disease, and the means to prevent its spread. It is always attended with a bright scarlet eruption on the skin, and is usually accompanied by a sore throat. *Whenever children have sore throats, or an eruption of the skin, even mildly, they should be separated from the rest of the family until a physician has seen them, or these symptoms have disappeared. It must never be forgotten that the mildest type of scarlet fever may communicate the most fatal form of the disease.*

HOW THE DISEASE IS SPREAD.

Scarlet fever is believed to be caused by a special poison (contagion) which may be conveyed, to persons previously unaffected, by personal contact, by infected clothing, rags, hair, or paper, or by any of the discharges from the body of a person sick with this fever. The seeds or germs of this terrible disease may be received from anything which has touched the sick person—as air, food, clothing, sheets, blankets, furniture, toys, books, wall-paper, curtains, cats, dogs, or even flies. *The discharges from the bowels, the kidneys, the nose and the mouth are considered to be extremely dangerous, as also all discharges from the eyes, ears and skin. A person who has had scarlet fever is to be con-*

*Instructions issued by the State Board of Health of Pennsylvania.

sidered dangerous so long as the skin remains in an unhealthy condition, or continues to peel off in scales or flakes. This is not less than six weeks, and may sometimes be seventy or eighty days. The poison may remain active for a great length of time, certainly for months, and possibly for years, as in the case of infected woolen clothing which has been packed away in drawers or trunks. Woolen clothing also probably carries it more readily than cotton goods.

TIME REQUIRED TO DEVELOP SCARLET FEVER.

The time which may intervene between exposure to the poison of scarlet fever and the appearance of the symptoms of the disease varies. It may be from one to fourteen days; the average is variously given from six, eight or ten days, but the time may be extended to four weeks.

PERSONS LIABLE TO THE DISEASE.

Scarlet fever is usually considered a disease of childhood. The greatest number of deaths from the disease are of children under ten years of age. Adults may, however, have it, and even if it is of a mild form, they may communicate the disease in its most malignant form to children. One attack usually prevents a second attack, though not always. *It is by no means necessary that every child should have scarlet fever. If children could be kept from its poison, none would have it, and thousands of lives could be saved.*

GENERAL PRECAUTIONS.

The disease being caused by a special poison, exposure to this poison *must be avoided, especially by children under 10 years of age.* Plain and distinct notices should be placed on every house or premises where there is a case of scarlet fever, and no child which has not had the disease should be allowed to enter or associate with persons who do enter such house or room, *nor with the cats or dogs from such houses.* Adults, whose services are not needed, should also keep away from them. *When necessity requires* one to visit such a house, the clothing should be changed and a bath taken before going where there is a child.

Beware of any person who has a sore throat. Do not kiss nor take the breath of such a person. Do not drink from the same cup, nor use any article handled by such a person until it is disinfected.

Whenever a child complains of a sore throat it should receive careful attention from its parents or friends until recovery occurs.

When the disease is prevalent in any district, children should be removed from the day and Sabbath-schools. They should also, at these times, not travel in the public cars or carriages, the upholstered seats of which may harbor the poison.

Parents in whose family the disease has appeared, who are able to do so, may send children unaffected with the disease to homes in which are no persons liable to contract the disease, but they should always be isolated for about two weeks after their removal from the public.

From families in which the disease is prevalent, children must not attend school, church or any assemblies, and the adults of the family should likewise abstain from attending church and all assemblies as much as possible.

Close attention should be paid to the source of the water and to the food supply. If possible, only the purest water should be used. If there is danger of contamination, *boil it before using*. Foods and milk should not be used which come from a house where there is scarlet fever, for they may convey the disease, especially the milk.

People who do not own their own houses, but who move from house to house, should always inquire whether scarlet fever, as well as any other contagious disease, has been in the house they propose to rent within a year, *and it would be well to demand from the owner or agent a written paper certifying that these diseases have not been present*.

Anything which deteriorates general good health tends to render the system liable to disease, and, in this way, filth may be considered as a promoter of scarlet fever. *Perfect cleanliness should be enjoined in the house and all its surroundings*. Sewer gas must not be permitted to enter the house. All foul odors must be destroyed in privies and cesspools by the appropriate agents. (See disinfectants.) Let the house receive all the pure air and sunlight possible.

Newspapers, in reporting deaths, should mention *scarlet fever*, that the people may be warned to remain away.

Cases of scarlet fever should be reported to the local Board of Health *at once*.

Do not send clothes to a public laundry to be washed during an epidemic of this disease.

PRECAUTIONS IN THE SICK-ROOM.

(1) Whenever scarlet fever is known to exist, or is even suspected, the first thing to secure is *the complete isolation of the patient from his family (except the nurse) and from the public*. Continue this isolation until the physician says *the danger is over*.

(2) The sick-room should be in the upper part of the house, preferably. It should be as large and pleasant as possible, with means for free ventilation without the creation of cold draughts, which are especially to be avoided in this disease. An open fire-place, with a lamp burning in it, is excellent. Before using, the room should be cleared of all needless woollen or other draperies which might harbor the poison. The carpet should be taken up, and only a few strips laid on the floor to deaden footsteps. All articles possible should be removed from the room. A sheet, wet with the sulphate of zinc, should hang before the door connecting the sick-room with the rest of the house, or in the passage-way. No person but the nurse and the physician should enter the sick-room until the patient has recovered and the room has been disinfected.

(3) The nurse should *mingle not at all* with the children in the family unaffected with the disease, and as little as possible with the adults. Her outer dress should be of some material that can be washed, rather than of wool, which harbors the disease.

(4) Pocket-handkerchiefs should not be used, but small pieces of rags employed instead, for wiping the mouth and nose. Each piece, after being once used, should be *immediately burned*. A vessel containing a solution of chloride of lime (standard solution No. 1) should be on or near the bed at all times for the patient to spit into.

(5) As the hands of nurses, of necessity, become frequently soiled by the discharges of the patient, a good supply of towels and soap and two basins—one containing a solution of chloride of lime (standard solution No. 1), and the other plain clean water—should always be on hand for the immediate removal of the taint.

(6) All glasses, cups or other vessels used by or about the patient should be scrupulously cleansed *in boiling water* before being used by others; and all food and drink touched by the patient should be destroyed or buried.

(7) The discharges from the bowels and kidneys should be received, on their very issue from the body, into vessels charged with disinfectants, and, in cities where sewers exist, after disinfection, thrown at once into the water-closet; but in country places these discharges should be buried in the soil, at least one hundred feet from a well, and in no case should they be thrown into a running stream nor into a privy-vault. Rags which are infected with discharges from bowels, nose, throat, eyes or ears, or from the bladder, should be burned or buried.

(8) The clothing removed from the patient, all sheets, towels, handkerchiefs and napkins, should be thrown *at once*, on removal from the patient, into a tub containing several gallons of standard solution No. 1, in which they should remain two hours before being carried out of the room. Under no circumstances carry clothing from the bed or person of the sick through the house before it has been wet in the disinfecting fluid.

(9) Under the direction of the attending physician, it is well to anoint the body of the patient with scarlet fever twice a day with oil, lard or vaseline, containing about ten grains of carbolic acid to the ounce. This should be done so long as the skin continues to peel off. Perfect cleanliness should be enjoined in the room, the nurse and the person of the patient.

(10) It is hardly necessary to add that, in this dangerous disease, the patient should always be under the care of a skilled physician.

PRECAUTIONS DURING CONVALESCENCE.

(1) The patient should remain in the sick chamber, in complete isolation from the public, until the physician declares there is no danger of his conveying the disease.

(2) He should, before leaving his room, take warm baths for several days, care being taken to remove every particle of loose skin from the body and head. These baths should only be taken when permitted by the attending physician, and in a warmed room. The patient should never appear, on recovery, in public in any clothing worn while he was sick, nor for the two weeks before he was taken sick, until such clothing has been thoroughly disinfected. So long

as there are any peeling of the skin or any soreness of throat or eyes or any symptoms of dropsy, recovery is not complete.

(3) He should be very careful of himself for some weeks, dressing warmly in woolen garments, avoiding chills and colds, and using the eyes very little for reading or study.

PRECAUTIONS AFTER RECOVERY OR DEATH.—BURIALS.

After death the body should be wrapped in a sheet saturated with corrosive sublimate solution, placed in an air-tight coffin, and buried as soon as possible. The body should not be exposed to view after being placed in the coffin. Undertakers should not furnish chairs for these funerals, and all things necessarily used should be washed with a solution of corrosive sublimate before being taken to another house. The funeral should be private, and no children should be present.

DISINFECTION.

This work should be done *thoroughly*, and generally it will be best to employ an intelligent person *who has had experience in this work*. Recent investigations by a committee of the American Public Health Association show that some substances, on which much reliance had been placed, are of very little value as disinfectants. Only those which the committee recommend are here mentioned.

SOME ARTICLES SHOULD BE BURNED.

Such are playthings, used during the sickness, paper books, articles of fur and woolen articles, such as carpets and some articles of clothing badly infected. In a city, this is best done by making them up in a compact bundle in the sick-room, thoroughly sprinkling the outside of the bundle with a solution of chloride of lime or of corrosive sublimate, and then carrying it to the glowing furnace under a large boiler in some industrial establishment. If in the country, these things should be carried into a field or woods, far from any human habitation, and made to burn quickly and completely. Under no circumstances should these things be thrown out into an open space.

DISINFECTING SOLUTIONS RECOMMENDED BY THE STATE BOARD OF HEALTH.

(1) STANDARD SOLUTION No. 1.—Dissolve chloride of lime or bleaching powder of the best quality (containing at least twenty-five per cent. of available chlorine) in soft water, in the proportion of four ounces to the gallon.

(2) STANDARD SOLUTION No. 2.—Dissolve corrosive sublimate and permanganate of potash in soft water, in the proportion of two drachms of each salt to the gallon.

(NOTE.—(1) This solution is highly poisonous. (2) It requires a contact of one hour to be efficient. (3) It destroys lead pipes. (4) It is without odor.)

(3) STANDARD SOLUTION No. 3.—To one part of Labarraque's solution (*liquor sodæ chloratæ*.—U. S. P.) of hypochlorite of soda add five parts of soft water.

(NOTE.—Competent authority has pronounced this superior to all other disinfectants.)

(4) STANDARD SOLUTION No. 4.—Dissolve corrosive sublimate in water in the proportion of four ounces to the gallon, and add one drachm of permanganate of potash to give color to the solution as a precaution against poisoning. One fluid ounce of this solution to the gallon of water is sufficiently strong.

(NOTE.—Corrosive sublimate solution should be kept in wooden or crockery vessels.)

TO DISINFECT THE DISCHARGES FROM THE PATIENT.

Use standard solutions Nos. 1, 2 and 3, keeping a pint of the solution used constantly in the vessel ready for any emergency.

TO DISINFECT CLOTHING, TOWELS, BEDDING AND SUCH TEXTILE FABRICS AS CAN BE WASHED.

Use standard solution No. 4, *one ounce to a gallon of water*, or use one gallon of solution No. 1 in nine gallons of water. Let the goods soak in the solution for at least two hours—better four hours—before they leave the room. Stir them up so that the solution can get all through them. After soaking, boil them *thoroughly*.

FOR THE DISINFECTION OF WATER-CLOSETS, URINALS, SINKS AND CESSPOOLS.

CARBOLIC ACID SOLUTION.—Mix one pint of carbolic acid with two and a half gallons of water.

Standard solution No. 4, diluted with three parts of water, may also be used in the proportion of one gallon (of the solution) to every four (estimated) of the contents of the vault. Standard solution No. 1 would require to be used gallon for gallon of the material to be disinfected. Dry chloride of lime may be sprinkled over the contents of a privy, or standard solution No. 2 may be made up by the barrel, and four or five gallons be applied daily during an epidemic.

TO DISINFECT THE SICK-ROOM AFTER IT IS VACATED.

If possible, let the room be thrown wide open for several days, for a thorough airing. If papered, let the paper all be removed with care. Then let all the walls, the floors and all the woodwork of the room, as well as the furniture, be washed with standard solution No. 4, one pint to four gallons of water, or of solution No. 1, a quarter of a pint to a gallon of water. *Let this work be done most thoroughly, getting the solutions into all the crevices.* If any dust be present in corners and crevices, let it be wiped up, not dusted away. Last of all, whitewash the walls and ceilings.

SULPHUR FUMIGATION.

Open all the closet doors and all the bureau drawers, hang up on lines all the clothing in the room, spread out as much as possible; then, to use this effectively, two pounds of sulphur should be burned in a room ten feet square. Every opening into the room, flues, doors, windows, cracks and crevices, must be closed, except the door by which the disinfector is to escape. The sulphur

is to be burned in an iron kettle or other vessel set in a tub containing a little water, to guard against fire. A little alcohol or kerosene must be poured upon the sulphur, by means of which it may be ignited. Leave the room quickly, for the fumes are highly poisonous when breathed, and close the door tightly. Let the room remain closed twenty-four hours or more. Then air thoroughly for several days.

Sanitary Undertaking.*

BY B. FRANK KIRK,
Of Germantown, Pa.

THE furore that has been created of late years by the agitation of sanitary precautions, as applied to undertakers, is considered by the public as something that the local health boards have brought forward as a new thing that is to be of wonderful efficacy in preserving the public health. In reality it is nothing of the kind. We, as a small factor in the make-up of useful occupations, did not fail to observe the insidious spread of contagious disease. Any intelligent undertaker could not fail to see that scrupulous caution was of absolute necessity when we had the care of contagious bodies. We also observed and discussed the singular fact that we could trace the path of a physician in some instances where disease of an infectious or contagious nature was following him in his line of practice, particularly in childbed fever, and we used extra precaution in those cases, and it was exceedingly rare for an undertaker to carry home any disease.

Our precautions were observed and commended by some of those who employed us. At *that* time our local health board was wasting their vitality in supervising the cleaning of cesspools, having no conception that there was danger lurking in death chambers far more terrible than what they were interesting themselves about. With the discovery of the germ agency in disseminating disease came also a grand effort on the part of our local health boards to belittle the undertaker in the estimation of the people, and the most odious and irritating rules were made and attempted to be enforced. We soon discovered that local health boards were rarely made up of scientific men, and it did not take long to convince the better class of physicians of the fact. We took care, however, to establish ourselves upon grounds that were tenable and which the world could see were based upon practical sense. We were not so egotistical as to claim to be scientists, making scientific discoveries, and investigating obscure scientific problems, and yet unable to explain one scientific term.

We never wanted the impression to get abroad that we were setting up a standard of sanitary science of our own. What we do want known is the fact that we are working upon experience gained and found effective in the midst of

* Prepared by special request for THE ANNALS OF HYGIENE.

contagion where we have been, and where many of our philosophers have not entered, and that is in the chamber of death. When the physician is done and left, his duties cease with the end of his patient's life. Here the sanitary undertaker enters upon the scene.

We are taught, and we know to a certainty, that the germs of disease are transmitted from place to place by mechanical agencies, and that there can be no infection without contact with the germ. There is no spontaneous generation of disease any more than plants or animals can spring into existence by spontaneous generation.

In every case the development of disease must come from contact with a pre-existing germ, which, in turn, can do no harm unless it finds in a person a predisposition and a susceptibility to receive the poison. Then there is a field for the increase and multiplication of its kind, until death ensues. At this time they are in maximum vitality, and are ready to be distributed and carried wherever sinful carelessness leads. The sanitary undertaker is here confronted by the fact that the issues of life and death are closely associated with his work. He knows that countless millions of microbes are swarming over the corpse, bedding and all the surroundings, and we have a conscientious duty to perform. These germs must be destroyed, and not permitted to be disseminated from that chamber. We employ all the appliances sanitary science has taught us. The rules of our local health boards require us to hermetically seal the corpse in its casket. That we do, and that is as far as science has entered into local health boards. Sanitary undertakers, however, are more concerned with the surroundings than with the body. The careful physician has a large field in plain view to operate upon when he introduces hygiene in the line of pure air, pure water, proper food, cleanliness and ventilation.

We labor behind the scenes in the most unappreciative way. We must destroy the germs to the best of our ability in circumscribed limits, for our labor at times demands the entire destruction of bedding and furnishings, and to get the sanction of a sensitive and distressed family who do not want to be disturbed, and will not enter into the matter willingly, is no little labor. In the face of all this the local boards of health endeavor to convince the public that we are unworthy of attention. It is almost impossible to persuade a mother that she must not give away infected clothing to the poor children of the vicinity. We also have a contest to prevent some people from throwing infected bedding upon the convenient shed roof, where the sun can dry the poisonous matter and the winds carry the germs thus the better prepared for dissemination. We are frowned upon if we object to have the soiled clothing carried into the cellar to be hung to dry around the heater, whence, when dry, the germs can follow the draft in the air flues to every part of the house, with sufficient vitality left to enter a window of a neighbor's dwelling, and it is only by referring the matter to their M.D. that they reluctantly yield to our advice.

Even here we have found doctors to take sides with the family and say our suggestions were of little account, as they considered that there was no danger after death, and we are often put to the blush to be rebuked by those

who certainly know better, but have not the moral courage to insist upon what is distasteful to their patients. Most certainly the sanitary undertaker in this one instance is no small factor in preventing the dissemination of disease. A man, who stood gazing upon Niagara, exclaimed, "What a waste of power!" a power that could be harnessed to do the work of ten thousand engines. And common sense would seem to say, as we view the whole expanse of our country and see undertakers always present in the death chamber where contagion has done its work, and find they are willing to do their full duty to stay the destroyer, what a waste of energy if these undertakers are not sustained by the physicians and recognized by the law and guided by proper sanitary rules! They could do a work of unsurpassed usefulness, and this great auxiliary force can be utilized and brought in full sympathy with all sanitary measures. Now we feel that we are in a position to know much more about these matters than some members of our local boards of health.

We claim that after a body has been arterially embalmed and thoroughly washed with a germ-destroying fluid, and then put in a hermetically-sealed casket, it is past doing harm and is innocuous, and could be safely shipped anywhere without danger to anyone. Treated in this way, no one need be denied the privilege of taking home a loved one who has died abroad or away from home. The danger is left behind in the death chamber, in the clothing, the bedding, and particularly the carpets; and yet, despite all our unaided advice, we have known all this debris and infectious material to be bundled up and taken aboard the cars upon railroads that refused to carry the corpse that was in a hermetically-sealed case and innocuous. It is understood that a hermetically-sealed case is water-tight and air-tight, and yet the railroad officials will not permit it aboard their train because the health board refuses to grant a permit for its removal, but accept all the filthy bedding the corpse died upon, loosely bundled up. The harmless hermetically-sealed case was stranded; and anguish and sorrow multiplied in the hearts of relatives, because they had to bury their dead among strangers, where they have no interest and no attachments. Sadly they return to their homes with all the belongings of the dead, each bundle and package loaded with contagion, nothing done to disinfect it. In one case an adult, from a distant place, died in our locality of scarlet fever; notwithstanding that we offered to use all the ordinary precautions, disinfect and hermetically seal the body in a casket, the local board of health refused to permit its removal, and the railroad company refused to receive it, but readily gave checks for the conveyance of all the dead girl's clothes, mattress and a large upholstered easy-chair upon which the poor form had died, and which was badly stained by the discharges from the throat. Yet a good-natured and burly conductor threw himself into the inviting seat and spent his spare time between stations in that contaminated chair, and called to the brakeman, with a twinkle in his eye and a jingle in his voice, to emphasize and make doubly interesting the fact of his good fortune.

We firmly believe that we have arrived at a period in the world's history when all things will have to be done in the light of scientific knowledge, and we

may as well prepare for this coming by an observant and attentive study of the attained results of scientific investigation, made practicable by those who are acknowledged scientific scholars and are authorities upon the subject of hygiene ; who, by their studies and opportunities, have brought to light the wonderful facts in relation to the means of prevention of infection that can be applied by the non-scientific, and it is the mark of wisdom to have an appreciative sympathy for the results of the labor of those who are our superiors by virtue of close application to study as well as by superior opportunities. We see great danger in the careless handling and manipulation of contagious bodies, and know full well if the present state of affairs is permitted to continue, there will come a time when the result of permitting everyone who can purchase a tin sign and call himself an undertaker and have charge of dangerous bodies and houses, will be disastrous to many innocent lives. All that is needed is a predisposition of a large community, and a careless undertaker can do the rest.

We know not what results took place at the terminus of the railroad journey with the infected clothing and easy-chair before alluded to, but of the many instances patent to our knowledge we give an illustration : A number of years ago we carried a child who had died of diphtheria to its grave in a carriage that was upholstered in cloth. After the funeral, and on his road home, the driver picked up two females he knew and delivered them at their homes, they living a mile apart. Inside of two weeks diphtheria developed itself in both those homes. Since that time we have had all our carriages upholstered in leather, so that they can be disinfected and kept clean without injury to the material, and besides they will not carry disease and infection to innocent riders, for undoubtedly those two mothers carried the contagion home to their children from that infected cloth upholstery. It is evident we must be watchful and abreast of all the information, appliances and scientific discoveries relating to the specific purpose of staying contagion and stamping out infection.

Our profession should be educated to its full capacity of usefulness in that line, and in furthering all sanitary measures that are approved by competent authority, and this authority should in a measure be in sympathy with us. We want a statutory provision, whereby every undertaker should be placed under some legal status, and no one permitted to follow the calling unless he is versed in what he is doing and why he does it. We have our disinfecting agents and formulas, and now what we want is intelligent application.

Do Not Eat So Much.

BY R. C. FISHER, M.D.,
Of Washington, D. C.

THERE are many more among us who are ill from eating too much than too little, and it is reckless advice for a doctor to give when he says it does not matter much what a man eats provided he eats enough. It matters very much

what a man eats, and it matters even more that he should not eat too much. There is absolutely no danger of starvation or even debility to be feared from using for forty days such foods and in such quantity only as are prescribed by the Catholic Church during that period, and from a physical standpoint a moderate and restricted diet without meat can only produce good physical results on the human system. If a man is a glutton, more politely called a gourmand, he can gourmandize on highly-seasoned terrapin and fish and rich dishes of eggs and butter and milk as well as on beef and pork, but this would be keeping the letter of the law, and his body would suffer the consequences.

It seems to be a more and more widely acknowledged fact in the ordinary experience of life that "we eat too much," and my own experiments for eighteen years with regard to the relation of food to the needs of the organism have taught me that no one is in danger of starvation who eats a pound of vegetable food a day and nothing more. The liability to every kind of disease is incalculably decreased for the moderate eater and proportionately increased for the man who constantly overtaxes his digestive organs. I have no hesitancy in stating that the devotee who does not eat during the Lenten season from two to three times more than he needs to repair the tissue used by exercise and work is a very rare person.

The well-known deleterious effects of tea on the nervous system (in addition to the fact that there is no article of consumption more adulterated by admixture of foreign and mineral substances, or so difficult to obtain pure than tea) would easily account for the impaired health of the case cited by Dr. Hammond where a young lady lived on tea and toast for forty days. Had she eaten a slice of whole wheat bread or toast twice a day and drunk only water during the Lenten fast, her health would have been firmer, and her system purified at the end of that time. It is easily seen and proved that it makes very much difference what we take into the body for food. Were this truth but realized, so much hurtful and poisonous medicine would not be constantly recurred to in the endeavor to counteract the effects of something taken into the organism as food.

The pleasures of the table as the object of life are on the increase among us, and the public attention needs to be called to the dangers ensuing to mind and body very much more than they need to be enjoined to be sure to "eat enough." Our French friend, Max O'Rell, describes the American girl on ship-board as eating every two hours. Any one of the three meals a day eaten habitually by Americans is sufficient, if not more than sufficient, to supply the waste of the system and to repair the tissues used up.

It is, no doubt, quite true, "that the use of wine and beer taken after meals promotes digestion." If a man eats excessively, the juices necessary to digest his food being used, cease to flow, and a stimulus, such as wine, beer, coffee, excites them to action again. But nature will not allow herself to be used so unnaturally without rebelling, and before long the man who trusts to wine and beer to do the work of digestion for him will be suffering from a bilious attack, and, if he keeps on, his foes will be rheumatism, gout and apoplexy.

Happiness as a Hygienic Factor.

BY CLARENCE T. ATKINSON, ESQ.,

Of Bordentown, N. J.

SO much has been written by learned people as to the necessity of breathing pure air, the drinking of fresh and uncontaminated water, and the eating of nutritious and palatable food as a prerequisite to the healthy action of all the organs of life, that it would seem to be adding to what is already summed up for one to write more upon these subjects.

Very little is written and very few impressions are made on the mind of the busy and onward-marching American on the subject of this article. We know that without pure air we cannot have healthy blood; we know that we cannot have a clear brain and energetic nerve-action without unadulterated and nutritious food; we know that impure water will breed in the human system fatal and vicious disease; but do we know, or do we stop to think how very important it is, that we should be happy in our everyday life?

Why is happiness necessary? Because a sour temper makes a sour stomach. Let a person eat his breakfast in solemn, moody spirit and he will soon realize a depression, which he attributes to some food "that did not agree with him." He wonders why he don't feel better, and then, perhaps, goes to the fatal bottle for the blithesome spirit that he might create within himself had he only shaken off the depressing condition of his mind.

"Happiness is the chief end and aim of life," says Pope. Do we, in the rush of business, the hurry and worry in the fight for existence, in the scramble for wealth and the jealousies incident to the attainment of ambition's ends, keep this chief end and aim in view? The one sacrifice that American people make is happiness. With this sacrifice goes health. In these days of the typewriter, telegraph, stenography, steam-cars and innumerable inventions and contrivances, driving us at lightning speed in every avenue of life, we little appreciate the strain and drain on our vitality. We take little rest in proportion to the work and waste that take place. We all know and recognize this state of affairs. The whirl of business would cease and be prostrate were we forced back to the old methods. There is but one plain course—we must be strong enough for this strain if we would keep apace and attain our allotted maturity.

How can we acquire this strength? Not by the use of drugs and medicines. Not by the use of alcoholic drinks which burn and go out. The *first*, when we are sick, will cure us and restore a healthy condition if properly administered under the direction of a competent physician. The *second* stimulates us to undue energy and waste of vitality and leaves us in about the same condition as a steam engine after the fire has been extinguished. If these methods do not answer, then what will? The answer is plain: we must resort to *hygiene*. We must discover those laws of health which God made for us, and thereby attain complete and healthy action of all our functions.

Make the health of first importance. Learn the rules of hygiene. When

called upon to violate them, feel as guilty as if you had committed some crime, and resolve never again to break such wholesome laws. Carry out the resolution to the letter.

One of the rules of hygiene is the possessing yourself of those circumstances which are attended with joy and felicity of mind. This is happiness. This condition of mind makes the blood freely circulate, the digestion active and strong, and the powers of assimilation operate in full force. It makes the heart beat in healthy harmony and drives away apprehension, which always paints in black. A little day-dreaming is good for the health of body and mind. It is better than any whisky or other stimulant that ever entered the human stomach. Do not be afraid to dream and to fascinate yourself into the happiest state attainable. One author has written the following: "Men talk of dreaming as if it were a phenomenon of night and sleep. They should know better. The grand results achieved by us are self-promised in dreams awake. Dreaming is the relief of labor; not of itself, but for the opportunity it affords for dreaming, which is the great under-monotone of real life unheard, unnoticed because of its constancy. Living is dreaming. Only in the grave are there no dreams."

It should be a rule with everyone never to look on the black side of events. This rule you can enforce without being visionary and impracticable. Reason, and you have judgment. Sound judgment is no enemy of cheerfulness. Most people you meet talk to you about the sad things that are going to happen either to themselves, their property, or their friends, or the government. It is a clear violation of the fundamental law of hygiene.

To illustrate: A servant girl was found by her mistress sitting in the kitchen crying as if she would break her heart. "Why," said her mistress, "Mary, what in the world is the matter?" "Oh," said the foolish girl, "I was sitting here thinking, and as I thought, I thought of my little boy Jimmie, if he was to come here, and I was out in the yard hanging up clothes, or I was out front scrubbing, or was down cellar for coal, or was up-stairs with you, or if it was my day out, and Jimmie was to see the stove and was to take off the lids and play with the fire and burn up, what I would do. Boo-hoo!"

Now let the reader reflect, and can you recall any time when you have thought about this and that, and the direful consequences that might by some possibility follow? A slight encouragement of this spirit and it becomes a settled habit. You cannot enjoy life, nor can you have health if you tolerate such enfeebling habits. The rule then is, cultivate a pleasant, contented, cheerful and happy nature.

History records a notable instance of Philip the Fair, of France, dying from mere grief, because he could not bear the disgrace incident to the divorce proceedings of his three sons for the same cause of divorce. What will kill a king will kill a subject.

Light up that face. Drive away that wrinkled forehead and corrugated brow. They are not signs of intelligence or emblems of wisdom. They do not indicate vitality playing on your irritated nerves. They are sure signs that

the head aches, or the eyes are weakened, or that the brain is afraid of light, or that you are possessed of hatred to mankind and feelings of remorse.

If you are confined in the counting-room, or to the professions, or pursue a city life, then get out into the green fields, sit by the sparkling waters and watch the happy flying birds; listen to their merry and cheerful songs. Remember there is always some bright hope deeply buried from human sight.

Depressed and unhappy spirits are best relieved by change. It is easy for everyone to get this change. Car fares are cheap. The passage on the boats is still cheaper. A few minutes' travel takes you from the city walls into the fresh and sunny expanse of the charming country. Here all cares should be banished. You are to live a new life for the time, and go back feeling that the world is not done with you yet, or you with it. You get new courage. The clouds that shadowed your pathway yesterday are now displaced by the entrancing light and the clear, promising sky. The horrible specter of unhappy and cankered depression has fallen before the angel of peace and good cheer. The wife you wanted out of your sight you would now embrace; the child whose merry, rippling laughter grated upon your nerves is now captivating melody that brings smiles, where the day before sat enthroned the frightful monster, scowl.

The dollar of yesterday looks as big as two to-day. The breakfast that nauseated now invites. The newspaper that contained only foul and wretched suicides now beams with pleasing news. The work to-day is but play, and you wonder why you cannot find more to do. Such will be the change that happiness can work for you.

Observe this law of nature and creation. You will be healthier, wealthier and wiser.

I will prepare an article soon on the enemies of happiness. Our enemies teach us many things. We are to heed well what our enemies have to say about us.

Unhygienic Funeral Customs.*

BY REV. JOHN N. M'CORMICK.

It is a singular fact that from the earliest times known to history the burial of the dead has been attended with abuses, absurdities, and even cruelties of the most monstrous sort. Equally striking is the fact that many uncivilized, unchristian, even inhuman funeral customs persist to the present day, to the suffering and shame of us all. The ostentatious and elaborate obsequies, the showy mourning, the glowing (and often grossly excessive) "tributes to the deceased," the whole sickly, artificial pomp and parade of sepulchral display have become bywords among us; yet fashion continues to tyrannize over the entire ceremonial and to dictate everything, from the length of the unwhole-

* From the *H. A. and Health Journal*.

some crape veil to the depth of the border on the mourning cards and envelopes. We recall the story of the poor woman who, upon the death of her husband, was given by her friends \$100 for food and clothing. After the funeral she called on some one for help, saying that her children were starving. "But what has become of that \$100?" "Oh," she said, "I spent all that on the funeral."

Twenty-five millions of dollars are annually expended for funerals in England and Wales alone. The expense of a funeral in the city of London is said, comparing one year with another, to average \$50. In an American city, recently, \$3,000 was spent at the funeral of a young girl. A promising sign of the times is the formation of Burial Reform Associations in England and in this country, which have for their object the prevention of these foolish expenditures, and to promote intelligent and hygienic funeral customs; for our funeral customs not only offend good taste, and violate the genius of Christianity, but they break, also, the laws of health.

One funeral often prepares the way for a dozen more. The pastor, who pays his visit of consolation to the bereaved family a day or two after the funeral, is almost certain to find two or three members of it sick, and to hear: "I caught a severe cold at the funeral," "Mother was completely exhausted by the excitement and exposure," "Mary was overcome by the heat and had a fainting-spell," "John got his feet soaked standing so long on the damp ground," or something of the same sort.

It is often in the room where the services are held that the first harm is done. Here every ray of sunlight is carefully excluded, the air is heavy with oppressive odors, many are compelled to stand in the halls or by the doors, where they are exposed to constant draughts, and in this dark and dismal chamber of horrors perhaps one hundred persons are wedged together, remaining sometimes for two or even three hours. It is no wonder that many are made sick, and that the mourners have headaches as well as heartaches. Frequently, too, when the death has been caused by contagious disease, or where others in the same house are suffering from it, a morbid sentiment and an unintelligent public opinion insist on a public funeral service. I have, myself, in the case of malignant diphtheria, seen the casket opened and the body exposed to view, while the officiating minister was compelled to ride to the cemetery in the same carriage with the father and mother of the dead child, who had just left the sick-room in which were other children suffering from the same disease.

Other unhygienic customs are encountered at the grave. After a wearisome ride, which, upon our city streets, reminds you of the pauper's funeral—

"Rattle his bones over the stones"—

a large crowd of relatives, friends, and even idle busy-bodies collect about the open grave, and there they stand, no matter what the condition of the ground or the weather may be. Custom demands that the minister and all the men present shall uncover their heads during the service, and that all, men and women alike, shall remain around the grave until the last spadeful of earth is

thrown in, and the last flower placed in position. When we remember that the family are often worn out by weeks of nursing and anxiety, devitalized by grief, and excited and unnerved by the occasion itself, it is no wonder that serious results so often follow, and that many cases of fatal illness begin at the grave, as well as end there. The custom of removing the hat, especially in inclement weather, might surely be dispensed with without any diminution of real respect whether for the deceased or for the sacred office. So with the custom of standing about the grave. If not entirely omitted, as in many of our northern cities, at least it should be understood that in bad weather the committal service shall be read in the chapel or public vault of the cemetery; or, if the family insist upon going to the grave, that the infirm, the aged and the delicate shall not be expected to leave the carriages.

By a foolish insistence upon meaningless, pagan, unnecessary customs, the health of all concerned, from the chief mourners and the minister to the undertaker's man, and even the carriage horses, is seriously threatened.

It is encouraging, as a sign of growing intelligence, to read in our newspapers, "No flowers," and "Interment private." In the presence of such a fact as death, and in all that has to do with death, the utmost simplicity is most becoming. And in this, as in everything else, *simplicitas est sanitas*.

On Rescuing Drowning Persons.*

The following directions to swimmers for rescuing drowning persons are given by Herr Tetens, President of the Seaman's Society in Hamburg:

(1) When you approach a drowning person, call to him in a loud voice that he shall be saved.

(2) Before springing into the water, undress as completely and as rapidly as possible. Tear the clothes off if necessary; at any rate, loosen the drawers below if they are bound about the ankles, else they fill with water and hold back the swimmer.

(3) Do not touch the drowning person so long as he still struggles strongly in the water; wait a few seconds until he becomes quiet. It is foolhardiness to touch anyone while he struggles with the waves, and he who does this subjects himself to much danger.

(4) When the unfortunate is still, seize him by the hair of the head; throw him as quickly as possible upon his back, and give him a push to hold him up. Then throw yourself upon your own back and swim thus for land, meanwhile holding with both hands the drowning person by the hair—of course, with face upward and his head resting upon your own body. In this way one reaches land more quickly and surely, and a skillful swimmer may even keep two or three persons above water. A great advantage of this expedient is that the rescuer is in the most favorable position for keeping his own head as well as that of the unfortunate above water. One can also remain in this position a long while, which is of importance when obliged to wait for a boat.

* From the *Schweiz. Blätter f. Gesundh.*

(5) The "death-grip," practically, is a thing of rare occurrence. As soon as a person becomes weak and begins to lose his senses, his grip becomes weaker, and his hand at last completely loses its hold. He, therefore, who has an idea of saving a person by swimming, need have no fear of the "death-grip."

(6) If the person has sunk before he could be reached, the location of the body will be very accurately indicated by the bubbles which rise to the surface now and then. In flowing water which prevents the perpendicular rising of bubbles, allowance must of course be made for the direction and the rapidity of the current.

(7) In diving after a body, it should be seized by the hair with only one hand, while the other hand and the feet are used in regaining the surface.

(8) In salt water when the current sets from the land, as when the tide is going out, it is a mistake to struggle to reach land. One should rather throw himself upon his back, whether alone or encumbered, and await help from the shore. Many persons perish by exhausting themselves in vain attempts at swimming against the current, when they might have thrown themselves upon their back and awaited help from shore.

(9) These rules are applicable in all cases, whether in still water or in the roughest sea.

The Influenza of 1890 and a Depressed Tone of Human Vitality.

In our Edinburgh correspondent's notes last week interesting extracts were given from the report submitted by Dr. Clouston upon the Royal Edinburgh Asylum for the past year. They had reference more especially to some evidence produced by Dr. Clouston as to the existence of an exceptionally low tone of human vitality during the year 1890, in relation to the epidemic of influenza. Whether it was the influenza in the early part of the year that had perceptibly lowered human vitality, or whether the prevalence of the influenza merely showed that European humanity was in a lowered state of vitality, so being a fit nidus for the influenza germs to propagate in, or whether it was the sunless, summerless general character of the year, Dr. Clouston could not say. He distinctly connected, however, the influenza in some way with the unprecedented number of melancholic patients sent to Morningside Asylum. He goes on to say, and, we think, with truth, that he believes the epidemic of influenza left the European world's nerves and spirits in a far worse state than it found them, and that they scarcely yet had recovered their normal tone. Many others have expressed themselves in the same sense, and we look upon the subject as one of deep interest. An excellent opportunity will be given our asylum superintendents, at this season of preparation of their annual reports, to confirm or otherwise this expression of opinion on the part of Dr. Clouston.—*Lancet*.

School Hygiene.*

BY GEORGE NEWTON, M.D.,
Of Vicksburg, Mich.

DURING the past ten years school hygiene has been the subject of many able papers and learned discussions, and I would consider the topic well worthy of the time and attention it has received. I do not expect to advance any new ideas or say anything that has not already been said, or even present the subject in a more fitting dress.

The topic of general school hygiene is of very great importance, embracing, as it does, all the conditions and circumstances of life, favorable and unfavorable, from early childhood to the completion of school-days. In order that children may arrive at school-age with strong physical and mental endowments it is highly necessary that the hygienic environments of home be such as will not only conserve the vital forces, but will re-enforce them from day to day and year to year.

Every dwelling should be so constructed as to allow the direct rays of the sun to penetrate, if possible, every room, and every room should be well ventilated. Playfair says: "In modern hygiene nothing is more conclusively established than the fact that vitiated atmospheres are the most fruitful of all sources of disease." Frank Wells says: "Headache, nausea and lassitude, great debility, impaired digestion, severe colds, consumption and other diseases of the respiratory system, as well as other serious diseases, may be caused by confinement in the foul atmosphere of an unventilated room." Prof. W. A. Hammond, in speaking of the sanitary value of light, says: "In convalescence from almost all diseases it acts, unless too intense or too long-continued, as a most healthful stimulant both to the mental and physical systems. The evil effects of keeping such patients in obscurity are frequently very decidedly shown, and cannot be too carefully guarded against by physicians." The delirium and weakness which are by no means seldom met with in convalescents kept in darkness disappear like magic when the rays of the sun are allowed to enter the chamber.

The practical application of these remarks is this, that care should be taken, both in health and disease, to insure a sufficient amount of light to the inmates of houses, and that it is impossible to rear well-formed, strong and robust children unless attention is paid to this requirement.

Sun baths, in apartments where the solar rays can fall upon the naked body, are doubtless highly advantageous to health, and rooms for this purpose could easily be constructed in or on most of the dwelling-houses. At present, a chief object of many families seems to be to devise means for keeping the sunlight out.

Another important matter to be considered in raising healthy children is

* Read before the Sanitary Convention held at Vicksburg, Mich.

that of dress. The subject of clothing, from its hygienic standpoint, should receive much more attention than it does. One important object to be secured by clothing is uniformity of temperature. The average temperature of persons in health is $98\frac{5}{8}^{\circ}$ F., and this is maintained by the conditions of the blood, unless some counteracting influences prevent it. Clothing may affect a normal temperature in various ways. Compression obstructs the free flow of blood, and, consequently, causes an unequal distribution of heat. Tight gloves and shoes result in cold hands and feet. A deficiency in quantity and quality of clothing permits an undue escape of heat, thereby chilling the surface and forcing inwardly surface blood, causing congestion of internal organs. One part of the body may be overheated by a superabundance of clothing, while another part is suffering with cold. How often do we see children loaded with clothing about the chest and neck, while the lower parts of the body and limbs are barely covered. The results are obvious to those who give it a moment's thought. Fashion and custom have taken the place of better judgment in this matter, and the results are failing health of our children and premature death. Flannel should be worn continuously, or at least should be put on as soon as Fall weather commences and worn until early summer. In fact, it is considered more healthful during all seasons of the year. In cases where flannel irritates the skin, gauze may be worn under it, which will obviate all trouble of that character.

In one of Mr. Emerson's essays he says: "Get health. No labor, pains, temperance, poverty, nor exercise that can gain it should be grudged, for sickness is a cannibal which eats up all the life and youth it can lay hold of, and absorbs its own sons and daughters."

There are certain abnormal conditions of the eyes of school children that seem to be increasing to an alarming extent, and sanitarians are making thorough investigations for the purpose of ascertaining the cause. In an article published in the ANNALS OF HYGIENE, October, 1888, and written by D. F. Lincoln, M.D., I quote the following: "It is generally accepted as proved that near-sight is very liable to be inherited. Far-sight (old sight) is also found in children, and, like near-sight, it increases in frequency and degree as children grow older, until somewhere about the age of 15 it begins to be less frequent, and at the age of 20, among students, near-sight decidedly preponderates over far-sight." Dr. E. G. Loring has given diagrams illustrating this fact in the case of three nationalities—the German, the Russian and the American. The observers whose facts are taken for the diagrams are Conrad, who examined 3,036 eyes of school children in Königsburg; Erismann, who examined 4,368 eyes of scholars in St. Petersburg; and Derby and Loring, who examined 2,265 eyes in New York schools. The ages in all cases run from the youngest to the oldest pupils, including members of superior schools, up to the age of 20. In the German table the percentage of near-sighted eyes rises from 11 1-10 in the young children to 62 1-10 in the oldest; in the Russian, from 13 6-10 to 43 3-10 per cent., and in the American, from $3\frac{1}{2}$ per cent., at six to seven years, to 26 78-100 per

cent. in the twentieth to the twenty-first year. There are those, however (like Laudolt), who lay the chief stress, as regards causation, upon general conditions of health, maintaining that hardship and poor fare constitute one of the chief causes of near-sight. It may be so, and this is not the place to enter into the argument satisfactorily; but if so, how shall we apply the doctrine to the case of Amherst College, where Derby's strictly accurate statistics show an increase from 44 2-10 to 50 8-10 per cent. during the four years' course? In Amherst the conditions of living are as favorable as can be found. "Not only is there no hardship and no poor fare," but the young men are under a regime of physical exercise which produces a distinct effect in lessening illness during their residence.

A brief statement of the leading causes not in any presumed order of frequency is given here: (1) inherited tendency; (2) study while the system is in a weakened condition; (3) study in a bad light; (4) study in a bad posture; (5) study while the eye or brain is fatigued or congested; (6) study in excess at the formative period of life, when the bodily tissues easily assume a wrong bent.

The State Board of Health of Pennsylvania, in a circular addressed to teachers, gives some very valuable ideas on this subject:

"In the school-room, the eyes are very frequently injured. It is asserted that sixty-eight per cent. of educated Germans over 21 years of age have impaired eyes. The eye troubles of highly civilized countries are rare among savages and those who have never been in school. Children should not sit facing the light. Let the desks face a wall without windows. The school-room should be so well lighted that every pupil can see to read readily with the book held at fifteen inches from the eyes. On dark days be sure that pupils in the middle of the room can see to perform their work. If curtains are used they should have the roller at the bottom of the window, as the most valuable light comes in from the top. Windows should not be filled up with plants. A dazzling light is nearly as bad as insufficient light. The best light comes over the left shoulder and from above. Sunlight should not fall directly upon the books or slates of the children. Blackboards should not be between windows. Where pupils are required to copy work from the blackboard the teacher should be very careful to write in a large and legible hand. The board must be kept clean, for pupils cannot see what is written on a greasy surface. Pupils should sit erect and not bend over their work. They should not strain the eyes at any time. Whenever a child complains that its eyes 'ache,' it should be excused from its duties and a note sent to the parents. Pale inks and greasy slates are injurious to the eyes. Children should not read when lying down, riding, or when sleepy. They should be seated so that they can perform their work properly. They should be encouraged to sit near the lamp at night and not as far as possible from it. Teachers should remember that the eyes are often too weak for purposes of study after measles, diphtheria, scarlet-fever, whooping-cough and other diseases of childhood. Some inflammations of the eyes are contagious. Young children are sometimes called obstinate when they really cannot see.

“Children should be instructed to use their eyes on distant objects as much as possible when out of doors. So far as possible, children should be placed on seats of a proper height, their feet resting upon the floor, and the desk not too high above them.

“The back of the seats should curve in at its lower third, to fit the small of the back and thus prevent stooping. In all cases where a child is thought to be injuring the eyes, the teacher should send a note to the parents.”

To seat a school-room properly is probably as difficult a task as either heating, lighting or ventilating. There have been many plans devised by those engaged in the manufacture of school desks and seats, and I believe the results have been reasonably satisfactory, as the seats and desks of to-day are far superior to those in use fifteen or twenty years ago. It seems to me that a school seat might be devised, susceptible of raising and lowering sufficiently to accommodate scholars of different heights, also a desk with an additional adjustment for placing it at the proper angle, not only to accommodate bodily comfort, but to place the work at right angles, or nearly so, with the axis of the eye. The physical deformities, caused by the desk being out of proportion to the seat, are probably far more than physicians or patrons of schools imagine. Lateral curvature of the spine is a deformity of quite frequent occurrence, and according to some of our late authorities, the cause is partially or in some cases wholly attributable to the unsanitary conditions of the school. The affection is of a passive nature, and occurs during the period of active growth. “The primary curve commonly occurs in the dorsal region, and the deviation is to the right, while the secondary or compensating curves are in the cervical and lumbar regions, and deviate to the left.”

These abnormal conditions usually occur between the tenth and fifteenth years of age, or during the years of active school work.

You will notice that in all cases where the dorsal deviation is to the right, the right shoulder is unduly elevated, while the left is correspondingly depressed—the natural result of long-continued study and labor at a desk so high as to compel the student to elevate the right shoulder, causing the spine to deviate from the perpendicular. “A lack of physical culture is the cause of many bodily imperfections, such as narrow, contracted chests, round shoulders, projecting shoulder-blades, and lateral curvatures of the spine.” As a preventive of spinal diseases, there is nothing more effective than an active physical training.

Among the ancients the Greeks were the best developed, and acquired the most perfect forms. The secret of their bodily symmetry consisted in the attention given to gymnastic exercises. The youth were regularly trained in athletic games, and schools for this purpose were supported at public expense in all the towns of Greece. The consequence was that few physical deformities were known among that celebrated people, and nearly all enjoyed that greatest of earthly blessings, sound bodily health.

A Vacation for All.

BY GEO. G. GROFF, M.D.,

Of Lewisburg, Pa., President of the State Board of Health of Pennsylvania.

THE value of an annual vacation, spent in the country or by the seaside, is generally recognized by all who have studied the needs of city and town dwellers of the present day. The importance of an outing in the country is appreciated by the benevolent associations which labor to send city children into the country for a week, or, in some cases, for excursions lasting but a single day. These Children's Week and Excursion Societies are doing much good, though reaching but a comparatively few children, and those sent to the country for a much too short time. Ought not something more to be attempted? Cannot more be done to extend the blessings of country life to a far larger number of city children than are at present reached by existing agencies? Why? Because, during the months of June, July and August of each year, in our cities and towns, more than one-third of the deaths are of children under one year of age, while nearly one-half of the deaths in our cities and towns during the heated season are of children under ten years of age. What a slaughter of innocents! It is entirely possible to rear to manhood and womanhood all the children born of healthy parents. Every child born into the world has the right to a strong, vigorous body. It is the duty of the State to prevent cruelty to all its citizens, and to insure to all their rights and privileges. And yet, in the year 1891 of the Christian era, in a Christian State, under the shadow of costly and imposing temples dedicated to the worship of God, in Christian homes, about one-third of all the children born die before reaching the age of five years! Die often of neglect; die for want of fresh air; die for want of proper, healthful food, in the midst of plenty; die for lack of God's sunlight; die in the midst of filth; die of neglect; are murdered! We have spoken only of the children. But men and women by the hundreds, and by the thousands, too, are perishing prematurely in our cities from the same causes which are destroying the children. There is no sadder sight than to look into the faces of these weary, helpless, hopeless toilers, who wearily sink into the grave, while those who could help pass by on the other side, as did the priest and the Levite.

Is it a question which concerns the Christian man and woman? Are we doing our duty to the helpless? Are we doing as Christ taught us to do?

It is becoming generally known that the movement of our population has been for a long time from the country to the towns and the cities. In 1790, about one-twenty-fifth of the people were town dwellers (and then only country places, as there were no large cities), now about one-third of our people are town dwellers. We all know how much there is in the general atmosphere of city life of our times which is opposed to the development and maintenance of sound and strong and vigorous bodies. The country is the ideal place in which

to rear and to educate children. If some children must be born in cities, all ought to have the privilege of spending a considerable portion of each year in the country, to roam over the fields and through the woods, to climb the rocks and trees, to pluck the wild flowers, to fish and swim in the streams and the lakes, to become familiar with nature in her every aspect. Such opportunities should, in some way, be secured to every child.

Rev. C. H. Woolston, in *The National Baptist* for September 11, 1890, in "That Vacation of Mine," tells what he and his church did to solve this problem of a vacation for a large number of people with limited incomes. Mr. Woolston, if I understand his plan, made a temporary summer camp for his church and congregation, and, under his able management, made it a great success. What has been made a success by one church can be made a success by many others. Let me urge upon every reader of THE ANNALS to give Mr. Woolston's article a careful reading, and then by careful thought and prayer to do what he can to establish such a camp for his church. Let me suggest for each church, or for a union of several churches, a permanent summer camp, to which, season after season, the pastors and members may go for health and strength. Mr. Woolston has shown that the idea is practical for a church. Quite a number of teachers have shown the idea of country camps to be practical for school-boys. The Worcester (Mass.) Natural History Society has now, for five years, conducted camps for hundreds of boys and girls, in the country near that city, with the most pleasing results.

THE PLAN PROPOSED.

Near most towns in the Eastern, Southern and far Western portions of our country are regions more or less hilly or mountainous, in which regions land, and often buildings, can be purchased for very low figures. In the mountainous portion of the New England States, numerous abandoned farms, with buildings, can be had for a few hundred dollars each, and other farms, not abandoned, can be had at prices almost equally low. The church could purchase one farm for the buildings, and for a headquarters, while hundreds and even thousands of acres of woodland and mountain-side adjacent would be free for the rambles of the children. To illustrate: I have on my table a letter from a gentleman in Pennsylvania who writes that he can furnish hundreds of acres at from 50 cents to \$1 per acre. His county is not far distant from either New York or Philadelphia. It abounds in mountains, lakes and beautiful streams. I have a letter describing a 600-acre farm, with three sets of buildings, a lake of thirty acres, well stocked with fish, and all for \$10,000. This is a splendid chance for some city church. I heard, recently, of two farms near me selling, the one of sixty acres for \$600, the other of fifty acres for \$1,000. Think of it, a country home for \$36 to \$60 rent per year! Both places had buildings. All over the Eastern portion of the United States rural properties are to be found in the market at much less than the cost of the improvements. (The improvements on the 600-acre place above are claimed to have cost \$40,000.)

THE MANAGEMENT.

Let the church or churches purchase or lease one of these places, then select a good man-manager, a good matron and a good cook. The first parties to go out can be lodged, the women and girls in the house, the men and boys in the barn. As the numbers grow, rough frame buildings and tents can be erected in which to sleep at night, while there should be a large, open pavilion for recreation on wet days. No effort should be made to secure all the comforts and luxuries of the city home. That would be robbing the camp of much of its pleasures and the children of much of the profit. The boys and men can and should assist in the erection of these buildings and tents; indeed, under a competent instructor, it is possible for them to erect all the buildings which may be needed in a summer camp. This will be a pleasant and profitable occupation, and will teach self-help.

Morning and evening prayers, lectures and talks on weekdays, instruction in swimming, shooting, etc., may be given with profit, while religious services should be regularly held on Sunday.

The camp should open as early as June 1, and continue open at least until September 1, or, better, the 15th. All provisions should be purchased of the farmers of the neighborhood, for in this way they will be secured fresh and pure, and at very reasonable rates, while the good-will of the neighboring community will be attained—a matter of importance.

It would be best to secure the property so near the church that the wage-earners, the heads of the families, could come out on Saturday afternoons to spend the Sabbath with their families. There are rough lands, which would answer the purpose I have in mind, in Bucks and Berks, and cheap farms in Chester and Montgomery Counties, Pennsylvania. I mention these as near Philadelphia. I do not know any portion of the State in which one could not find properties which could readily be secured for the purposes named.

THE COST.

The cost per week to those who could go out would be small. If the manager and matron were man and wife, and were persons who lived all the year on the farm, their salary would be small. In some churches, good persons could be secured at small compensation until the enterprise was well started. I think there ought to be little trouble in making the family expenses *less* than the same while at home in the city.

Would it pay? Yes; most abundantly pay. It always pays to do a good deed. Let us see whether the good, old-fashioned Sunday-school celebration cannot be *continued all summer with profit*.

The cost of a high-class eight-wheel passenger locomotive is about \$8,500.

A French scientist declares that the domestic pets of the world carry at least thirty per cent. of the common contagious diseases from house to house.

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EDITORIAL.

To Our Readers.

THIS journal is intended to be a medium of communication between those sensible persons who have the wisdom to appreciate the fact that "prevention is better than cure." The monthly visits of THE ANNALS bring to its readers the thoughts and experiences of physicians, who are rightly conceived to be the men from whom guidance in the prevention of disease should be sought. But it is not the physician alone who can give good hygienic advice. From the layman, experiences and suggestions of inestimable value are often gleaned, and we, therefore, would ask our readers to send us in short reports of cases and matters of sanitary interest, which will always find a cordial welcome in THE ANNALS.

The Efficacy of Ill-Health.

It seems paradoxical to speak of *ill-health*, and it is certainly not a correct manner in which to express one's self, yet, that our meaning may be clearly comprehended, we use this expression because it is a popular one. By *ill-health* one generally understands that condition where, while there is no definite, set, fixed disease, there is yet an absence of perfectly healthy action. The human machine is defective in its working; there is no acute disease; there is no regular, well-marked, chronic organic disease, but }there is a want of that thoroughly healthy, hearty vital action that goes to make the thoroughly healthy man. The victim of *ill-health* is not confined to his bed or the house; he is not regarded as a sick man; he is not an object of sympathy, being rather looked upon as a hypochondriacal *crank*, so to speak, who *imagines* that he has all kinds and varieties of diseases. The condition of the man in a state of *ill-health* is rather a negative than a positive one; he is *not* sick; he is *not* well; his derangements are not sufficiently obvious to warrant his friends or himself in considering him a sick person; yet the resultant manifestations of his vital functions are not sufficiently satisfactory to make his life a pleasure either to himself or to those about him.

It would seem that the condition of such a person would be a most deplorable one, but when we pause to reflect we may learn that there is a real efficacy in this condition of *ill-health*, and that it is not a condition or state to be so deeply deplored. The man in perfect health never thinks of his health;

the one in ill-health is always more or less solicitous in reference thereto; he who never has a pain, who knows not the meaning of dyspepsia, who always sleeps well, who is ever free from headache, whose liver and stomach are always in good condition, whose heart and kidneys are sound—such a person lives automatically, so to speak, so far as health is concerned. But, regardless as such a person will usually be of the laws of nature or of health, they may be likened to the willing horse, whose driver is very apt to drive to death. The man who never feels badly, physically, will be very likely to so drive his vital organs by more or less reckless living that sooner or later they will fail him, and that which was a magnificent heritage of physical vigor, offering to its possessor a long life of health and happiness, will be nullified in its effects just because of its own exuberance. On the other hand the individual whose physical condition is a little below par, he who is easily *upset* by any little indiscretion in eating or drinking, he who has more or less of aches and pains, he who is made to feel badly by loss of sleep or any little exposure, such a person will have continually before him the reminder that he must be cautious. Out of his very infirmities will arise a prudence that will warn him from the shoals and reefs of disease and turn him into the current of comparative health. He who has any suffering in any particular portion of his body will be very likely to look for the cause, and, having found it, will take measures to remove or mitigate it.

Hence, does it not seem logical for us to speak of the *beneficence* of ill-health? We are all ready, at once, to admit that it is not wholesome, financially, for a young person to be possessed of very great wealth; so also might it seem that too much health is not so desirable as one might at first suppose. Of course we would hardly go this far; we would like to see every individual endowed with *perfect* mental and physical health; but, since this Utopian conception cannot be, then we would that those who are not so blessed would come to recognize in their infirmity a possession calculated to redound strongly to their physical welfare.

The Lay of the Lymph.

The following appropriate lines have appeared in the *British Medical Journal*:

Who'll kill the bacillus?
 "I," said Herr Koch,
 "With my lymph and syringe,
 I'll kill the bacillus."

Alas! Doctor Koch,
 With false hopes you fill us;
 For firm as a rock,
 Holds the field—bacillus.

And assembled bacilli
 Through a cultur'd bacillus
 Say, "We're not quite so silly
 As to let Herr Koch kill us."

"Must admit," owns Herr Koch,
 "I can't kill the bacillus,
 Only cut off the stock
 Of supplies from the bacillus."

Replieth Herr Virchow,
 "No lack of supply;
 From one organ driven
 To another he'll fly."

So some vow with a twinge,
 "No more shall you drill us—
 With your lymph and syringe
 You can't starve the bacillus."

NOTES AND COMMENTS.

To Remove Warts.

It is said that castor oil applied for two to four or six weeks—that is, once a day—has not failed in any case.

Headache.

Headache almost always yields to the simultaneous application of hot water to the feet and back of the neck.

For a Child in Convulsions.

A child in convulsions should be immersed to the neck in a hot bath—don't stop to remove clothing—putting cold water on the head. But if only a small quantity of hot water is obtainable, hold the child over a basin and pour the water on the back of the neck.

Disagreeable for the Doctor.

A physician of Chicago, who was on the witness-stand testifying to the insanity of a man, was interrupted in his remarks by the landing of a rotten egg on his head. The egg was thrown by the subject of the doctor's testimony, who was promptly admitted to be insane, or at least "queer."

General Butler's Frugality.

General Butler's luncheon, which he eats at 2 o'clock, does not vary from day to day. It comprises one small ham sandwich, one small chicken sandwich and a few swallows of brandy and water. He brings it with him from Lowell to Boston every morning, and does not eat anything else between breakfast and dinner.

How Men Regard Corsets.

Mrs. Longshore-Potts was lecturing in Cleveland some evenings ago, and finally asked the gentlemen in her audience to show by a standing vote whether they opposed the wearing of corsets by their sisters, their cousins and their aunts, and all the men in the hall arose as one. Mrs. Potts did not dare risk a vote by the gentler part of her audience.

For Persistent Dandruff.

Dr. Stephen recommends that we should use a mixture of three scruples each of resorcin, olive oil and sulphuric ether and six and one-half ounces of alcohol. To be well shaken and applied to the scalp by a bristle brush about twice as large as the ordinary mucilage brush, by insinuating it with the locks of hair; the head to be well washed with soap and warm water twice a week.

Infection a Crime.

A movement has been set on foot in Michigan for the passage of a State law making it a crime to give a person a communicable disease.

How Mothers Murder their Babies.

What would be the result if you should eat every hour? Yet some mothers cannot understand why their children are sick and cross "when they are fed frequently."

A Bad Place for Dudes.

The Legislature of Michigan recently passed a bill making it a misdemeanor, punishable by fine and imprisonment, to manufacture or sell, give or deliver cigarettes of any kind of tobacco, or cigarette paper in books or blocks for wrapping cigarettes.

An Aid to Sleep.

Nothing helps more to secure a good night's rest, after one of the sticky, breathless days which come in July and August, than a good plunge or even a sponge-bath. Taken in the evening, before retiring, it is a soothing treatment for uneasy nerves and heated frames.

For Bad Breath.

For foetid breath *Rev. Général de Clinique* recommends the following: 15 grains each of saccharine, salicylic acid and bicarbonate of sodium, 1 oz. alcohol, and 10 drops essence of peppermint, a teaspoonful of which is placed in a wineglassful of hot water, and used as a gargle once or twice daily.

Jewish Immunity to Cancer Denied.

B. W. Richardson (Asclepiad) denies the statement recently put forth of an almost, if not total, immunity of the Jewish race from cancerous affections. This observer has had no inconsiderable number of cancerous cases in Jews under his care, and found no noteworthy difference in the occurrence of the disease. Tuberculosis, however, he maintains is, according to his observations, much less prevalent in Jews than in Christians.

The Law as Regards Twins.

When twins are born in France, the last born is considered by the law the eldest. Consequently, if both survive, and, in case of boys, reach manhood, the second is called to the army to serve, being pronounced the eldest. By some extraordinary calculation the medical men who were consulted at the passing of the act years ago came to the conclusion that the last born of twins was always the first conceived.

Good Advice for Hot Weather.

Keep cool. Don't worry. Keep clean. Melons, lemonade, ice cream, cheese and chow-chow, though palatable enough this hot weather, and though harmless enough in proper quantities, and by themselves, kick up a row when all taken together and bring their patrons into melancholic conditions.

Inebriety Legally Disqualifies the Physician.

The Secretary of the State Board of Health of Iowa announces that he is convinced that habitual drunkenness constitutes "palpable evidence of incompetency," as the law reads, and that therefore the physician bound by inebriety should be shorn of his certificate entitling him to practice in that State.

For Excessive Perspiration of the Feet.

Dr. Winogradoff advises an application of a five per cent. solution of chloride of zinc. The feet are first washed in tepid water and then the solution is applied by means of a sponge, the surplus being washed off after a few minutes. It is unnecessary to add that the application should be made only by the physician.

Investigating Skeletons.

Dr. Gilbert M. Humphrey, an Englishman who has been investigating the skeletons in old graveyards, calls attention to the remarkable preservation of the teeth of these remains of British ancestors. He finds that the teeth of the modern man have deteriorated shockingly. It is not hard to understand. Moderns live on soft bread and sloppy foods and do not exercise their teeth.

To Clean Tartar from Teeth.

R. Dry hypochlorite of lime 3 ss.

Red coral 3 ij. M.

S.—Triturate well and mix thoroughly. To employ it, moisten a new brush slightly, dip it into the powder and apply to the teeth. A few days' use will produce a marked alteration in the appearance of the teeth.

To Tell the Approach of Death.

Dr. Chiappoli states that he has frequently noticed in patients, apparently very far from death, an extraordinary opening of the eyelids, so much so as to give the eyes the appearance of protruding from their orbits, which he considers an invariable sign that death will occur within twenty-four hours. In some cases, when only one eye is wide open while the other remains normal, death will not follow quite so rapidly, but will take place inside of seventy-two hours, there not being the slightest chance of recovery after these symptoms set in, however remote final dissolution may seem to be. Chiappoli says that he is utterly at a loss for an explanation of this death symptom, but ascribes it to a diseased state of the sympathetic nerve.

• **Hygiene Among the Cannibals.**

Cannibal King (to missionary)—“I think the best thing I can do is to eat you.”

Missionary (in earnest protest)—“I do not agree with you, sir.”

Cannibal King—“Well, I musn't eat anything that doesn't agree with me.”

Key West as a Paradise.

Surgeon-General Hamilton says that Key West could be a terrestrial paradise if the inhabitants so willed it, and would perfect its hygiene, raze its hovels and build better dwellings. The island is a coral rock, crowned by royal palms, bathed in sunshine and fanned by the sea-breezes and steady trade winds. In a region of perpetual summer its atmosphere is always balmy.

Cremation by Electricity.

A movement is said to be on foot looking to the erection of a new crematory wherein bodies are to be incinerated by electricity. The scheme is regarded as a feasible one, and it is believed will do much toward removing the prejudice existing against cremation by the elaborate method practiced in Pennsylvania, Long Island and elsewhere. The electrical crematory is the invention of a Sicilian; the heat is generated by a dynamo of a pattern similar to that used in the incandescent light system, and succeeds in evaporating, as it were, the bodies, till nothing remains.

A Dangerous Fashion.

Some time ago paragraphs were printed everywhere telling that Parisian women exhaled a permanent perfume from their persons by injecting a few drops of scented liquid beneath the skin, thus odorizing the actual blood. Then physicians took it up and asserted that women, in so doing, ran a serious risk of blood-poisoning, and the perfume-injecting fad was apparently nipped in the bud—only apparently, however, for it has cropped out again, armed now with medical authority against its harmfulness, says the *New York Times*. And it is recited that the idea was discovered by a physician who, in using eucalyptus hypodermically as a remedy for phthisis, found that the skin and breath of the patient became tainted with the pungent and disagreeable odor. So he tried perfume injections to counteract this, with good results. And to-day, for fifteen shillings, in Bond Street, London, the whole outfit—essence, syringe, etc.—may be procured. Probably the kit is also on sale in New York, or, if not now, it soon will be.

It is to be hoped few women will take to the practice. The question of blood-poisoning does not seem to be definitely settled, but, aside from this consideration, there is something sickening in the idea of perfuming the blood. Good blood does not need it. Put plenty of red corpuscles in it by good air, cleanliness and good living, and the aroma of health will be the result—more wholesome and desirable than that of crushed roses or “violets thrice distilled.”

A Pleasant Japanese Watering-Place.

The watering-place of Kusatsu has a great reputation among the Japanese in the treatment of leprosy. M. Louis Bastide, who recently visited it, found 300 lepers in residence there; they live in certain special hotels, in which every one, from the proprietor to the waiters, is a leper. Some of those who resided in Kusatsu were mere beggars, but others were persons of a better class, who took the waters diligently, hoping for a cure.

To Preserve Ice.

The following method for preserving ice in a pitcher will not come amiss to those who need it for use all night or in the sick-room. Fill the pitcher with ice and water and set it on the center of a piece of paper; then gather the paper up together at the top and bring the ends tightly together, placing a strong rubber band around them to hold it close, so as to exclude the air. A pitcher of ice-water treated in this manner has been known to stand over-night with scarcely a perceptible melting of the ice.

Chafing of Trusses.

De Garmo recommends highly the following, not only for use with trusses, but wherever a toilet powder is used for children:

R.	Amyli	. . . . .	℥iv.
	Cretæ gallicæ	. . . . .	℥ij.
	Alum. ust.	}	. . . . . āā ℥ij.
	Acidi boracic.		
	Acidi carbolici	}	. . . . . āā ℥ss. M.
	Ol. limonis		

Sig.—Powder very fine.

Where an abrasion has once occurred and is slow to heal, on account of the constant wetting by the urine and the irritation of the truss, the author has found nothing better than the balsam of Peru.

Negro Philosophy.

General Sherman told good stories and here is one of them:

"When I was with the army in Georgia, a slave-owner, one Christmas, missed a fat turkey. He suspected a fine-looking colored man, and had him brought before him:

" 'You have stolen my turkey and eaten it,' said the irate master.

" 'I'se not gwine to say I didn't when you says I did, massa.'

" 'I ought to do something to you. What have you got to say why I should not punish you?'

" 'Well, massa, you hain't los' anything particular. You see, you had a little less turkey and a good deal more nigger.'

"And the master had to acknowledge the philosophy of his slave and let him go unpunished."

Hypnotic Effect of Warm Bandages.

Warm baths, as is well known, produce a calming effect, and tend to bring on sleep, and Alldorfer has attempted to apply such a method in patients where a sedative effect is desired and yet where a bath is inapplicable (*Jour. de Méd. de Paris*, March 9, 1890). His method consists in wrapping the loins and belly with linen cloths soaked in warm water, and then covering them with oiled silk or rubber cloth, so as to prevent evaporation, while the whole is kept in place and loss of heat prevented by a flannel cloth.

This procedure is of ready performance, and the author says that by this simple means he has obtained the most astonishing results in the treatment of sleeplessness.

Immunity to La Grippe after Vaccination.

Dr. Julius Goldsmith, of Madeira, reports that, at the beginning of the year, influenza was carried into Madeira from France, while, at the same time, smallpox was severe among the population. Revaccination was, therefore, the order of the day, and all persons revaccinated escaped the influenza. Of 212 cases of revaccination, more than one-half succeeded, and of the 98 failures 15 took la grippe lightly. In an isolated villa the household contained 26 persons (18 strangers and 8 in the family). All revaccinated persons escaped, while some of the remainder suffered severely. Might not this explain why children remain free from influenza, as most of them yet remain under the influence of their vaccination?

The Non-specificity of Infectious Diseases.

According to the *Med. Record*, Dr. Ernst Roger, of Potsdam, as the result of a long and careful study of infectious fevers in the cadet barracks at Potsdam, has reached some novel conclusions. He holds, for example, that because there is a general agreement as to the period of incubation in such diseases as scarlet fever, measles, r6theln, diphtheria and mumps (with, perhaps, the exception of measles), and because all of them have many features in common, they are all species of mixed infection in which there is a common organism, and that the special modifications in each disease are the results of the presence of certain other specific bacteria. He holds that this common organism, under certain circumstances, loses its virulence, and regains it when placed under favorable conditions; that it and the other organisms which play a prominent part in the production of the special symptoms produce poisonous substances which may cause rapid intoxication of a patient, while through the spores that are formed the infection may be transferred to others, or they may give rise to a second crop of the organism in the original host (autoinfection); that the producers of the mixed infection belong to the suppuration-causing group; and that they give rise to different symptoms and pathological conditions according to the tissues that they attack—the glands of the skin, the subcutaneous connective tissue, lymphatic glands and lymph vessels, the mucous membrane, the serous surfaces, or other elements of special organs. Roger's views are fortified with a long array of tables and statistics.

Rye Bread as a Disinfectant.

Rubbing the walls of a room containing a sick person with fresh rye bread, according to the *Wiener Bau Ind. Zeitung*, will not only remove dirt and stains, but will also eradicate all disease germs and seeds of contagion. It mentions experiments with rooms which had long been occupied by patients with contagious maladies. After a single careful rubbing, three out of twelve walls were found free from germs. After a second treatment, every wall was pronounced clean and disinfected. The process is very cheap, both in material and in the fact that unskilled labor can apply it. An ordinary room, about 10 by 16, the walls of which were estimated to harbor nearly one million disease germs, was cleaned completely with about sixty cents' worth of bread.

Oatmeal as a Food.

The *American Analyst* is of the opinion that many people injure their digestive organs by eating insufficiently cooked oatmeal, being forced to this conclusion by the too prevalent advertisements of oatmeal prepared by different methods, and claimed to be capable of being cooked in from three to five minutes, which is simply an impossibility. These kinds of oatmeal are simply decorticated oats, which before grinding are steamed. The steam destroys any low organisms which may be present. A little bicarbonate of soda and lime is added to help dissolve the albuminoids, and sometimes diastase to increase the converting power of the starch to sugar, but there is nothing in this process that can so alter the chemical nature of oats or oatmeal as to make it possible to cook them ready for easy digestion in from three to five minutes.

Wash Fruits Before Eating Them.

The following curious instance is reported by M. Schnirer of the ease with which tubercle bacilli may be disseminated. While at work one day in the laboratory of Weichselbaum, he sent for some grapes to refresh himself with. The fruit had been kept for some time in a basket outside the laboratory, and was covered thickly with dust, so that the water in which it was washed was absolutely black. On examining the water he reflected that, inasmuch as the neighboring street was traversed frequently by consumptive patients going to the clinic, the dust probably contained the desiccated sputa of these persons, charged with tubercle bacilli. To settle this point M. Schnirer injected into three guinea pigs ten cubic centimeters of water in which the grapes had been washed. One animal died in two days from peritonitis, the two others died on the forty-eighth and fifty-eighth days respectively, presenting marked tuberculous lesions, especially at the place of injection. The water in which the grapes had been washed was taken directly from the faucet, and the glass containing it had been sterilized; neither the boy who had brought the grapes, nor the merchant who had sold them, was tuberculous; hence the cause of infection was beyond doubt the dust on the grapes. This experiment illustrates the danger arising from the dissemination of desiccated tuberculous sputa in the air. The conclusion is obvious: Wash grapes before they are eaten.

Stand Up.

A wise physician has lately called attention to the injurious effects of too much sitting. The American people are notoriously a nation of sitters. The result is that the lower limbs grow weak and spindling, while the body gives down and doubles up and grows at once thick and flabby. The internal organs are cramped and weakened. The stomach becomes dyspeptic, the kidneys debilitated and diseased. These sedentary people could stand or walk about at their work twice as much as they do. Then the chest would expand and the trunk grow erect, slim and graceful, particularly if attention was paid to deep breathing. Admiral Porter, 75 years old, engaged constantly in literary work, always stood up at his desk to write. He was a splendid specimen of health and vigor. Stand up to read and write, at least part of the time.

Animal Food for Infants.

There is no greater error in the management of children than that of giving them animal diet very early. To feed an infant with solid animal food before it has teeth proper for masticating shows a total disregard of the plain indications of Nature in withholding teeth suited to this purpose until the age at which the system requires solid food. Before that time milk, farinaceous food and animal broths afford the kind of sustenance which is at once best suited to the digestive organs and to the nutrition of the system. The method of mincing and pounding meat as a substitute for mastication may do very well for the toothless octogenarian whose stomach has been habituated to concentrated nutriment, but the digestive organs of a child are not adapted to the due preparation of such food, and will be disordered by it.

Cleansing Cream.

To an inquiring correspondent the *American Druggist* gives this formula of a paste for removing spots and stains from cloths, collars, etc. :

- (1) Extract of quillaja 1 ounce.
- Borax 1 "
- Oxgall, fresh 4 ounces.
- Tallow soap 15 "

Triturate the borax with the extract of quillaja, and afterward with the oxgall, which will cause at least partial solution. Then thoroughly incorporate with it the soap so as to produce a plastic mass, which may be molded in sticks or put into boxes.

If no extract of quillaja is at hand, soap-bark in shreds may be exhausted with boiling water, and the liquid evaporated on a water bath. One hundred parts of bark yield about 20 parts of extract.

- (2) Oleic acid 1 part.
- Borax 2 parts.
- Oxgall, fresh 5 "
- Tallow soap 20 "

Triturate the borax with the oxgall, then thoroughly incorporate with it the soap, previously reduced to powder, and lastly incorporate the oleic acid.

Slaves to Drugs.

"Yes, I am addicted to the use of morphine," said a victim recently, "and, according to the general idea of slaves to habit or taste, the morphine fiend is one of, if not the worst. We're bad enough, I'll admit that, but there are others that are just as bad, and of whom the public knows nothing. Now, for instance, I know of one man who takes quinine as if it was flour, and he couldn't possibly get along without it. He is a man who drinks regularly, taking probably a dozen glasses of whisky, often more, a day. With every drink of whisky he takes a spoonful of quinine. It is kept at the bar for him at all times, and is handed out to him just like a piece of loaf sugar would be to another man. Another fiend is the one who habitually takes antipyrine. He is really one of the worst. When this drug gets a good hold on a person there is really no getting away from it, and its effect is extremely bad."

Longevity in the Desert.

Deputy United States Marshal Ralph Dominguez, of Los Angeles, California, tells a very strange tale of the extraordinary longevity of some Indians upon whom he served some papers recently. Five Mission Indians were subpoenaed to testify in a case wherein the government is plaintiff. The point involved is as to whether or not the Indians shall be maintained in the possession of the Potrero reservation, which comprises 45,000 acres of the finest land in Southern California. The five Indians in question were wanted to testify as to how long they had had possession of the reservation, and their ages ranged from 80 to 120 years. Mr. Dominguez found them in the Yuma desert, about ten miles the other side of Indio.

The oldest of the quintet was Juan Sabichi, who had been on earth 120 years. Francisca Apache was aged 115 years. Juan Largo had only lived 100 years. Juan Cohulla was born ninety-five years ago. The youth of the party was Chief Cabezon, who had only recollection of seeing eighty summers pass.

Juan Sabichi and Francisca Apache recollect of the commencement of the work on the mission at Potrero, which, as a historical fact, was built 110 years ago. They both assisted in the construction of the antique temple, as they carried adobe, and in that way aided in the work. On account of their extreme age they can hardly walk now, but all things considered they are quite "chipper."

Francisca Apache was married fourteen years ago, when he was over 100 years old. In honor of his union to an Apache woman, who on the occasion was a blushing bride of sixty summers, he added to his name the name of the tribe his wife was a member of.

Four years ago the father of Chief Cabezon died at the advanced age of 140 years, and then his son succeeded to the chieftainship. These extraordinary instances of the longevity of the Mission Indians, who number about 600, speak a great deal for the climate of the Yuma desert, where, during all this time, they have lived undisturbed by the white man.—*San Diego Union*.

The Vitality of Disease Germs.

"Many farmers do not like to use two-year-old clover seed. It is usually lighter in color than that which is fresh, but if kept in a dry, even temperature it will grow as well as any. In fact, it often stays in the ground without injury when buried too deep for germination. There need be no hesitation in buying clover seed known not to be over two years old. After that age it is probably all right, but had better be subjected to a test before being sown in the field."

The above quoted advice to farmers about their grass might with equal propriety be given to them about their families, if we change the expression, "two-year-old clover seed" into "two-year-old disease seed." We must ever remember that the dormant vitality of disease germs is very great. Invisible to the naked eye, these little germs of scarlet fever, diphtheria or the like may be packed away in clothing for two or even more years, until, when taken into the system of some susceptible little darling, when planted in suitable soil, they sprout with energy, and another victim is added to the list of those who are murdered because of our want of forethought about disinfection.

The American Ganges System.

Among the legends of American history is a tale that proves that when Christopher Columbus made America he made winter first, and, for a time, was pretty well satisfied with himself. But after about four months he made up his mind that if he went back and told about his new country, and brought over the Pilgrims to live here, they would all die off with consumption and *tic-douloureux*. So he made haste and patched up what he could in the way of a summer, and that is the sort of weather we have been getting along with ever since.

There is a solemn warning to mothers in the first breath of summer. It says: "Take your boys and your girls, flee from the city as from a pestilence, and let them fill their lungs and grow." It ought to be considered a black and unforgivable sin for any father or mother, who can get away, to keep a child in the city during the six warm months of the year. It is a sin that the little white hearse, that is never lacking in summer tells over and over again. Bad fruit, bad meat, bad vegetables are the agent of death with which the child of the tenement-house has to deal. The hot pavements, closed windows and city stale food of the more lucky child are scarcely less deadly, yet they are what many a thin-legged youngster and drawling, peevish girl are treated to during a part of, if not all, the season.

It is true that the children of comfortable homes usually go away from the city for a part of the time. It is not here so much the going away as where they go. A watering-place, a noisy, bustling seaside or inland resort, is no proper place for a growing boy or girl. If for no other reason, it is likely to be death to their morals and perdition to their manners. What a youngster needs is fresh, sweet, cool air, that will make his pulses go strong and steady as a young ox's. He wants food and sleep and occupation that will grow in him blood and brawn, and make him, when his time comes, a *man*, and not a dyspeptic, muling creature, to make some woman wish, every time she shall see his shadow on the wall, that she had never been born! And what applies to boys

applies to girls as well. * Unless a father is tired of little girls about the house, he wants to pursue the same plan exactly with them.

It is hard enough, in all conscience, for a man and woman to bring into the world poor, little hungry, naked wretches who never asked to come, without sending them out to fight the world, the flesh and the dyspepsia with puny arms, stomachs that have not the slightest appreciation of what is good, and livers that never did a day's work in their lives. It sounds rash, perhaps, to say that throwing baby girls into the Ganges is moral beside treatment like this, but it is true. It is high time that we should understand there is nothing more sacred than child-life, and learn to treat it as humanely at least as we treat the pets of the kennel.

Ventilation.

Probably all, or nearly all, of the lawyers, doctors, bankers, brokers and business men of the country would object most emphatically to wearing underclothing which had just been taken from the body of another person, or drinking water in which a man has dipped his hands, or to eating food which had been in another person's mouth, and this objection would be raised even if they knew that the person by whom the clothing, or the water, or the food had thus, in their opinion, been contaminated, was as clean and healthy as themselves.

Very few persons, however, object seriously to drawing into their lungs air contaminated with the effluvia and exhalations from the lungs and skin and clothing of a number of people such as they meet in concert rooms, theaters, courts of justice and other places of assembly, although they know that a certain proportion of these other persons are neither clean nor healthy. They may know from the sense of smell that the air of the room into which they are entering is impure; they may tell you that if they go to a certain theater they have the "theater headache;" but they will go in all the same. It is not the custom of society to demand a supply of reasonably pure air. We do not expect it when we go to a dinner party, or a reception, or a ball at a friend's house, and, as a rule, we do not get it under such circumstances.

We believe, however, that the day is not far distant when public opinion will demand, and when architects and engineers will furnish, in accordance with this demand, drawings and specifications for heating apparatus for public buildings at least as minute and accurate as those which are now provided for other details of construction, and when this occurs ventilation will also be provided for. Meantime, we would say to all building committees, and to all whose approval of plans and specifications for a building to be erected for themselves or for others is requisite, do not approve such plans and specifications until you are satisfied that they provide for the admission in cold weather to each room of enough air to secure proper ventilation, and also for comfortable warming of each room while this cold air is being admitted, and if you do not know how much air is required, or whether the plans submitted will effect what is wanted in the way of heating and ventilation, get the advice and opinions of some one who does and pay for them.—*Engineering Record*.

Lettuce as a Carrier of Disease.

The *Maryland Medical Journal* has it from the authority of a farm-hand who "has been there" that the market gardeners about Baltimore (and other cities we doubt not), in their eagerness to be first in the market, dilute the human fæces from the cesspool with water, and by the aid of a watering-pot sprinkle it daily upon their lettuces and cabbages. The plants, grown large, and more or less saturated with fæcal matters, are then served as an appetizing luxury upon our tables, having first undergone such a cleansing as the cook thinks necessary. This cleansing for the most part consists in a hasty washing of the plants with *cold* water. In view of the fact that lettuce is eaten raw, and of the assertion made by scientific men that poisonous matters are taken by such herbs directly and unchanged into their tissues from the soil about them, it would be well for those who are interested in the public health to consider the methods by which the marketman fertilizes his garden and forces his early vegetables.

Dosing the Baby.

It would be well, both for young mothers and their infants, if nurses, relatives and other attendants could distinctly understand the difference between what the physicians call a pathological and a physiological condition, and could act accordingly. A patient is in a pathological condition when suffering from some disease, and is then a fit subject for medicine, which should be administered to check or correct the disease. A patient in a physiological condition is not suffering from disease, but from some process of nature, as childbirth for instance, in which not medicine is needed but rather environment, that is, the best conditions under which Nature may work out her own problems and processes. By confusing this simple but vital distinction, grave mistakes are frequently made. Newborn babes, in particular, are the helpless victims of this ignorance, which has crystallized into divers "old-wives' notions." The little one's skin is noticed to be of a yellowish color; he has the jaundice, and must be dosed immediately and liberally with saffron tea. The gratuitous assumption is made that he has come into the world hungry, and his delicate little stomach is filled up with molasses and water, sweetened milk, etc., while the food that was naturally intended for him is, perhaps, drawn off with a breast-pump and thrown away. Now it should always be remembered that a newborn babe is in a strictly physiological condition. He needs no food other than that which nature has provided. His skin is always of a different color from that it will assume later on. Dosing a newborn infant is inexcusable. It has killed thousands. The little bag which some old-time nurses used to carry about with them, full of all kinds of herbs, oils and other notions, is an abomination. Unhappily, it is not yet wholly obsolete. It will be well for humanity when we learn that the less nature is interfered with the better. A good principle in dealing with all classes of patients until the doctor comes is embodied in the old saying: "When in doubt what to do, don't go and do it."—*Babyhood for June.*

BUREAU OF INFORMATION.

The Avoidance of Scarlet Fever.

Editor ANNALS OF HYGIENE:

I often see in your journal that you will answer questions, so I come to you with my troubles. There is a bad case of scarlet fever in our block, and as I and the neighbors are in a dreadful dilemma, we wish you would tell us how to escape it in our families. Of course, this street is very wide, and each house stands alone in a large yard; if I keep my little girl home will she be less liable to take it, or do you advise going away? I have read the article in one of your issues on how to isolate it, but we hope not to need that. I put a bag of camphor-gum and asafoetida on her; foolish, no doubt. How is New York City now? Is it healthy enough to take my child there? Please reply, and oblige a great admirer of your journal.

Pittston, Pa.

MRS. H. WISEMAN.

(1) We would refer you and all of our readers seeking similar information to the article on the "Prevention of Scarlet Fever," which we publish elsewhere in this issue.

(2) All large cities are places where it will be most wholesome to keep children away from. The country is the ideal locality for children.—[ED.]

Slaughter-house Nuisances.

Editor ANNALS OF HYGIENE:

There is a slaughter-house in our town which is within fifty feet of my dining-room. It is very offensive, and we are compelled to close our windows in the very warmest weather on account of the offensive odor. There is a hog-yard connected with the slaughter-house, and the hogs wallow in filth which is enough to contaminate the neighborhood.

The hides are allowed to remain in the building for a number of days, and when removed the odor is dreadful.

There being no local board of health having control of this particular locality, I write to you for information as to who has the authority to remove it from the center of the town.

L. S. WALTON, M.D.

Tullytown, Pa.

The condition described above is a veritable nuisance and should not be tolerated. The law of this State gives jurisdiction to the State Board of Health in all localities where a local board does not exist. The proper method of procedure is as follows: Complaint should be made to the Secretary of the State Board of Health, Dr. Benjamin Lee, 1532 Pine Street, Philadelphia, Pa. This complaint must be signed by the authorities of the locality, or, in lieu of this, by ten reputable citizens. An inspector will be at once directed to make an inspection, and if he reports that a nuisance prejudicial to health really exists, its abatement will be ordered and enforced by the State Board of Health.

—[ED.]

Sleeping in Draughts.*Editor* ANNALS OF HYGIENE :

We are all well pleased with your periodical, and feel so much confidence in its decisions that we wish to ask for an article on the matter of arrangement of beds in reference to ventilation. What are the arguments for and against sleeping in a bed with an open window on one side and an open door on the other? Young people think "it's the only way to keep cool" in hot weather. You have no question department, so perhaps you will not reply to this, but in case you do, please make your answer so plain that "a wayfaring man, though a fool, need not err" in understanding it.

A SUBSCRIBER.

Westfield, N. J.

The answer to this query must be a carefully qualified one. The broad, general rule may be enunciated that it is wrong to sleep in a draught; but if the night in question be one of our hot, close, sultry nights, when but little air is stirring, then we can see no objection to placing the bed directly in the little current of air that may be blowing through an open window and door. If, however, the night be at all cool, or the wind high, the bed should be so located as to be sheltered therefrom. We must not forget that the heat-making powers are less vigorous in sleep, and since the air blowing over the body will extract the animal heat therefrom, and since the loss of too much of this heat means "catching cold," we must ever remember that while a gentle current of air passing over our beds on a warm night will be conducive to healthy sleep, a violent blow or draught will extract and dissipate so much of our animal or vital heat as to disturb the equilibrium of nature, and thus prove detrimental to health.—[ED.]

**State Board of Health and Vital Statistics of the
Commonwealth of Pennsylvania.**

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PLACE OF MEETING,

Supreme Court Room, State Capitol, Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Thursday in May, July and November.

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COMMUNICATIONS.

Longevity.*

BY SHEPPARD HOMANS,

President of the Provident Savings Life Assurance Society of New York.

WE read in the fifth chapter of Genesis: "And all the days that Adam lived were 930 years; and he died." Also "All the days of Seth were 912 years; and he died." The ages of five other descendants of Adam are then given, each of whom lived more than 900 years; and then we come to Methuselah, the oldest age on record: "And all the days of Methuselah were 969 years; and he died."

After the flood the ages recorded of the patriarchs were much less. Abraham died at the age of 175, Isaac at 180, and Jacob at 147; and Sarah, whose age is the greatest recorded in the Bible, of a female, died at 127.

In modern times we have the records, more or less authentic, of many persons who have attained extreme old age. Mr. James Easton, of Salisbury, England, published in 1799 a list containing the names of 1,712 persons who had reached the age of 100 years and upward. In 1826, Mr. Charles Babbage collected 1,750 similar cases. Haller cites two cases of extreme age which came under his own observation, one of 152, and the other of 169 years.

I select the following from a list prepared by the late Cornelius Walford, containing the names of 208 persons who died at or above the age of 120 years: Thomas Carn, Shoreditch, England, at the age of 207, in 1588. This case is said to be confirmed by the parish registers. If this be true, it is the most remarkable instance of longevity recorded since the flood. 175 years, Louisa Truxo, a negress, Brazil, in 1780. 152 years, Thomas Parr, Shropshire, England, in 1635. In the *St. Petersburg Gazette*, a Russian paper published in 1812, the case is recorded of a man who died in the Diocese of Ekateriois and who attained an age between 200 and 205 years at death.

* A paper read before the Englewood Literary Society, reproduced from *The Insurance Monitor*.

The age of Dr. Parr, as he was called, appears to be well authenticated. It has the testimony of Harvey, who dissected his body and found all the organs in a sound and healthful condition. Charles I sent for Dr. Parr, who had become famous by reason of his extreme age. Dr. Parr went to court, where he was feasted, and, eating too much, died from a fit of indigestion. He might have lived many years longer—in fact, he may be said to have died from an accident.

There would then seem to be abundant evidence that, not only among the patriarchs who lived after the flood, but among those who lived in modern times also, instances are not wanting of deaths approaching the age of 200 years, which would seem to be about the extreme limit possible for man to attain.

Scientific research has demonstrated some remarkable physiological facts which bear upon the duration of human life. It is demonstrated that *species* never change. Their physiological characteristics are fixed and unalterable. Man at the present day has precisely the same formation, the same organs, the same type, in fact, as may be found in mummies embalmed centuries before the Christian era. The fossil horse is the same as the living animal. Siberia was once peopled by elephants. These elephants have disappeared, but their fossil remains present precisely the same physiological characteristics as those of the living elephants. America was once peopled by mastodons. They have disappeared, but they have not left in their places other or different mastodons. The type of man, of the horse, of the elephant, and of every other animal, living or extinct, has remained unaltered by the revolutions and mutations of the globe.

Buffon, the celebrated naturalist, first enunciated the theory that the natural life of all animals bears a certain relation to the periods of their growth. This period is defined by the union of the bones with their *epiphyses*. When this union takes place, the bones, and consequently the animals, cease to grow. M. Flourens, accepting this ingenious theory of Buffon, and having the advantage of later and more correct physiological knowledge, made a series of very interesting experiments by which to determine the length of time after birth when this union of the bones with the epiphyses takes place in different animals. He then found that the natural limit of life in all animals is about five times the period of growth.

Thus the union of bones and epiphyses with the consequent natural life of different animals is as follows :

Man	grows 20 years.	Natural life, 100 years.
Camel	8 "	40 "
Horse	5 "	25 "
Ox	4 "	20 "
Lion	4 "	20 "
Dog	2 "	10 "
Cat	1½ "	7½ "
Hare	1 "	5 "

Buffon states: "The man who does not die of accident or disease lives everywhere to 90 or 100 years of age." Hufeland says: "Nearly all those deaths which take place before the hundredth year are brought on artificially, that is to say, by disease or accident." Dr. Farr in the Sixteenth Annual Report of the Registrar-General of England, says: "The natural term of human life appears to be 100 years." Finally, the prophet Isaiah says, 65: 20: "There shall no more thence be an infant of days, nor an old man that hath not filled his days, for the child shall die an hundred years old."

The extreme limit of life appears to be about twice the natural limit or term. Thus instances have occurred of man living to 200 years, or very nearly; and Buffon relates, with much minuteness, the history of a horse that lived 50 years, and died February 24, 1774.

How are we to account for the ages recorded in Genesis, of Adam, his sons and Methuselah? We cannot disregard the teachings of science, nor need we doubt the statement in Holy Writ. Each has Divine authority. By what theory can we reconcile the two? Simply that the year or unit of time among the early patriarchs differed from that adopted since the Deluge, which has been twelve calendar months. Hensler, a high authority, shows the strong probability that the year, till the time of Abraham, consisted of three months only, and that not until the time of Joseph was it extended to twelve months. "This assertion," says Hufeland, a still higher authority, "is, to a certain degree, confirmed by some of the Eastern nations, who still reckon only three months to the year," and besides, it would be altogether inexplicable why the life of man should have been shortened three-fourths immediately after the flood. Moreover, the recorded ages when the early patriarchs married was about four times the usual age. Again, with the period of Abraham, we find mention of a duration of life which can still be attained, and which no longer appears extraordinary, especially when we consider the temperate manner in which the patriarchs lived. We think, therefore, that Hufeland has arrived at a correct conclusion when he says that "man can still attain to the same age as ever."

By the census of 1851, there were living in England and Wales 319 persons (111 males and 208 females) whose reputed ages ranged from 100 to 119 years.

At the instance of Mr. James Thom, a parliamentary commission was appointed to visit each of these alleged centenarians, in order to examine the evidences upon which their reputed ages were based, as well as to inquire into the particulars as to their habits, modes of life, etc.

A singular instance of the thoroughness with which Mr. Thom and his commission conducted their inquiries was afforded in the case of a Greenwich pensioner who had served in the Royal Navy, and whose age was reputed to be 107 years. This sailor, whose name we will assume to have been John Smith, asserted that he was the son of Mary and Thomas Smith, and that the date of the marriage of his parents, as well as the date of his own birth and christening, could be found in the parish register, of his native place. Mr. Thom examined these parish registers, and found the several dates agreed with

the old sailor's statements, and there appears to have been no doubt that he was the son of Thomas and Mary Smith, as claimed. Mr. Thom, however, was not entirely satisfied. A further examination of the same registers showed that a year or two after the recorded birth of John Smith, son of Thomas and Mary Smith, the child died and was buried in the parish churchyard. A year or two subsequently another son of the same Thomas and Mary was born and was christened John. This John afterward died and was buried, and a further search showed the record of the birth and christening of a third John, son of Thomas and Mary Smith, and this was undoubtedly the old sailor himself, who was thus proved to be only 97 years, instead of 107, as claimed.

Mr. Thom and his commission visited every one or nearly every one of the alleged centenarians, and examined the evidences of age, mode of life, etc., in each case. It is remarkable that the evidences as to actual age were defective, or entirely wanting, and also that great diversities appeared as to modes of living, diet, etc. Some of the oldest used spirits and tobacco—others abstained entirely. In two particulars they were all alike—in the habit of early rising and in the avoidance of undue excitements or excesses of any character.

This same Mr. Thom investigated the case of a Captain Lahrbush who created quite a sensation in New York, where he died some twenty years ago, at the alleged age of 111 years. This Captain Lahrbush claimed that he was an officer in a certain Scotch regiment, British Army, and was present with his regiment at the treaty of Tilsit, which was signed in 1807. Mr. Thom first proved that the Scotch regiment named was not on the Continent in 1807. He then searched the records of the British Army, and found that the only officer named Lahrbush who had been entered on its rolls was cashiered for *youthful indiscretions* in 1818. A full discussion of these points was published in the *New York Tribune*.

WHAT IS LIFE?

There are some things which the mind of man cannot compass. Life, death, annihilation, eternity, space, are all beyond our comprehension. At the utmost we can only grasp some of their *attributes*. Of their essence we must always remain in ignorance.

One attribute of life is that it does not commence with each new individual or each new being. Life commences only once for each new species. Reckoning from the first created pair of each species, life never begins again; it is continued. Life is transmitted in each species by parents to their offspring, and with life certain unalterable, unchanging characteristics which belong exclusively to that species, which are never found in any other species. Species remain with unaltered organs, formation, etc., and species disappear, but their peculiar physiological characteristics never reappear in any other animals or beings.

Lord Bacon compares life to a flame. "Man is constantly consuming and being consumed." Hufeland says: "Destructive and creative powers are engaged, with a never-ceasing activity, in a continuous struggle within us, and

every moment of our existence is a singular mixture of annihilation and new creation. As long as the vital power retains its freshness and energy, the living plastic power will have the superiority, and the body will increase and approach nearer to perfection, and at last, the vital power being lessened, the consumption will begin to exceed the renovation, and decay, degeneration, and in the end total dissolution will unavoidably follow." The life of man has been divided into two nearly equal parts, one of increase, the other of decrease. Each of these parts is divided into two others—hence the four ages—infancy, youth, manhood, and old age. Lastly, each of these four ages is subdivided into two. A first infancy from birth to age 10; a second from 10 to 20—this is adolescence. A first youth from 20 to 30; a second from 30 to 40. A first manhood from 40 to 55; a second from 55 to 70. A first old age from 70 to 85; a second from 85 to 100. The first infancy is the period of dentition. The second infancy ends at 20, when the bones cease to grow and are united with their epiphyses. Youth is prolonged to 40, because it is only about that age when the body has attained its greatest strength; it is the *virile* epoch of life. The first manhood from 40 to 55 is the period of invigoration, which continues, however, until 65 or 70. At 70 old age begins. This is the period when the forces in reserve are drawn upon, when there can be little if any recuperation, when man lives upon his *reserve*. The unknown *force* of life diminishes more and more as age advances. The duration of life in any being will be proportionate to the innate quantity of vital power, the greater or less firmness of its organs, the speedier or slower consumption, and the perfect or imperfect restoration.

Long life has at all times been the chief desire, the principal object of mankind. How can it be secured? How can the flame be supplied with fuel? These are questions which have always engaged the attention of the deepest thinkers. Perhaps the most interesting and instructive example of the ability to prolong life and preserve health is given in the writings of a wise old man who owed his century of existence to a strict adherence to the principles of sobriety and moderation.

Luigi Cornaro was born at Venice about the year 1465, though the exact date of his birth is variously given. He died, April 26, 1566, at Padua. He belonged to one of the old families in the city. One of the Cornari, Marco, who died just a hundred years before Luigi's birth, was Doge; and three other bearers of the same name attained the same distinction after his death. He began life with a bad constitution, and a long course of excesses had, by the time he reached the age of 35, reduced him to a state of extreme misery. For four or five years he remained in constant bodily and mental suffering. Gout began to lay hold of him; he was tormented by pains in the stomach and by perpetual feverishness and thirst. His physicians pointed out to him that his chronic ailments must have their cause in his habitually disordered life, and urged him again and again to change it. He was long convinced of the truth of what they said to him before putting their advice into practice. For a while he pretended to follow it, still eating and drinking as before, and concealed the fact from his doctors—"as all patients do," he adds with some humor.

At last he found the strength of will to adhere strictly to the diet and mode of life prescribed for him, and at the end of a year he found himself, instead of a broken-down, hopeless invalid, unfit for either work or enjoyment, a healthy and singularly active and happy man. He then came to the natural conclusion that the regimen which had overcome the effects of excesses and repaired the natural weakness of his constitution must be the one to keep him permanently in good health; and from that time onward, during the sixty years which remained to him of life, he never, except in the rarest instances, and then to his hurt, swerved from it. He more than completed his eightieth year before he set himself down to write his own experiences for the benefit of others. During forty years he had lived a life of almost unbroken health and happiness—a life which contrasted as much with that which he had himself led in his earlier days as with that which he saw commonly lived by others around him. One consideration weighed upon him especially, namely, the value of the later as compared with the earlier years of life. Many men, he argued, by the time they had acquired the knowledge, judgment and experience which qualified them to be useful in the world, are physically, in consequence of their careless living, worn out. Men who might live, in full possession of all their faculties, to the age of 90 or 100, pass away at the age of 50 or 60. Many, who, as he puts it, might "make the world beautiful," are cut off untimely through the same cause. This feeling, joined to the amiable vanity of a happy and prosperous old age, prompted him to lay his experiences before the world.

Cornaro's regimen—which consisted of eggs, soup, bread, pancakes and such like food, with wine—was, as he tells us, intended for himself alone. All people should live temperately, but the temperance of one man is the excess of another. Cornaro's method is the simple one, that each man should find out for himself what is the suitable quantity of food and drink for himself and live accordingly. The charm of Cornaro's narrative consists in the garrulous *naïvete* with which he sets forth his simple creed and practice. Italy, he says, was suffering from three great evils—first, from flattery and ceremonies; secondly, from the effects of Lutheran doctrines; thirdly, from debauchery. These three evils, or rather "cruel monsters of human life," have destroyed respectively social sincerity; secondly, the religion of the soul; thirdly, the health of the body. The first two plagues he leaves to be dealt with by some "gentili-spiriti," who will banish them from the world; the third he undertakes to extirpate himself, being convinced that Italy, before his death, will return to her former "fair and holy manners." To this end he gives his own practice as an example to be followed—at least in its aim and spirit. His daily allowance of food was three rolls, the yolk of an egg, with meat and soup—the whole weighing twelve ounces; his daily allowance of wine was fourteen ounces. On one occasion, after he had slightly increased the quantities, he became in a few days "choleric and melancholy," and soon fell into a violent fever, from which he only recovered by returning to his former regimen. He never ate or drank to the extent of his appetite; avoided extremes of heat and cold; was careful to have sufficient sleep.

To keep clear of grief, melancholy, hatred and other perturbations of the mind was also an essential part of his system ; though temperance in eating and drinking will do much to counteract mental troubles, as well as to neutralize the effects of bodily hardships. Once when powerful enemies brought a suit against him, he kept his equanimity and won his case in the end ; while his brother, who had led an irregular life, died of anxiety while the case was still going on. If men were but temperate as he was himself, they would live to be 100 years old. He himself intended to do so, and to die at last, not of disease, but of "*pura risoluzione.*" If he had had a good constitution to start with, he would have reached 120 years instead of only 100. He did, in fact, die at the age of 100, if he did not surpass it.

Cornaro gives one curious reason for desiring long life. "If one is a cardinal he may become pope by age. If of importance to the republic he may become chief of it."

Cornaro finishes his first "Discourse" thus :

"Such is divine sobriety, friend of nature, daughter of reason, sister of virtue, companion of noble, modest, temperate, regular life and strict in all its actions. It is the root of life, of health, of joy, of address, of skill, and of every action worthy of a noble mind. Laws, divine and human, favor it ; irregularities and the perils attendant upon them fly before it as the clouds before the sun. Its beauty attracts every noble heart ; its practice insures to all a happy and lasting existence ; we know it to be the amiable and benign guardian of life, be it rich or poor ; it leads the rich to observe moderation, the poor economy ; the young man to a firmer and surer hope of life ; it protects the old man from death. Sobriety purifies the feelings, quickens the faculties, cheers the mind, strengthens the memory. The soul, almost freed by it from its earthly load, enjoys a larger liberty."

At 95, the closing words of his fourth and last "Discourse" still displays his native regard for *length of days*.

"I conclude by declaring that great age may be so useful and agreeable to men that I believe that I should have been wanting in charity if I had not taken pains to point out by what means they may prolong their days ; and as each can boast of happiness of his own, I shall not cease to cry to them, 'Live, live long.'"

From the foregoing we may see, if we wish long life and good health, how important it is to observe the principles of sobriety and moderation. Not only moderation in eating and drinking, but moderation in the undue excitements of passion and feeling. There is one disease, unknown in the scientific classification by physicians, which in the present day kills more patients than any other. That disease is *worry*. The patriarchs attained extreme old age, because of their simple, pastoral life, with avoidance of undue excitements or worry. There is no case on record of a man with violent temper, or who was affected with the disease, worry, who attained extreme age.

In addition to moderation and sobriety of living, and of the due observance of sanitary laws, I would add another very important factor, and that is the necessity of moderate and regular exercise.

A recent writer, Edwin Checkley, in his most interesting and instructive work, "A Natural Method of Physical Training," states that not one person out of a hundred knows how to *breathe* properly. He urges the inflation of the chest and the closing of the mouth when breathing, which should be drawn at regular and long intervals. I well remember, when a young man, seeing Indian papooses, whose mouths were kept closed by bandages which their mothers had fastened under their chins and around their heads. I did not then know the object. Checkley has explained it. It is to teach the children how to breathe.

It is wonderful how exhilarating are the effects of following Checkley's simple instructions, and how beneficial, as I can attest from personal experience.

Checkley lays down an admirable course of physical training and exercise without apparatus, and urges that each set of muscles should be duly strengthened and made supple. He is opposed to the usual gymnastic exercises with apparatus, as being costly, unnecessary, and tending to develop some sets of muscles unduly, while other sets are neglected. Athletes are generally developed abnormally, and by violent exercises run great risk of injuring the heart. Athletes rarely attain old age.

Here is a portrait by Hufeland of a man destined to long life:

"He has a proper and well-proportioned stature, without, however, being too tall. He is rather of the middle size, and somewhat thick-set. His complexion is not too florid. At any rate, too much ruddiness in youth is seldom a sign of longevity. His hair approaches rather to the fair than the black; his skin is strong, but not rough. *His head is not too big*; he has large veins at the extremities, and his shoulders are rather round than flat. His neck is not too long; his abdomen does not project; and his hands are large, but not too deeply cleft. His foot is rather thick than long; and his legs are firm and round. He has also a broad, arched chest; a strong voice, and the faculty of retaining his breath for a long time without difficulty. In general, there is a complete harmony in all his parts. His senses are good but not too delicate; his pulse is slow and regular. *His stomach is excellent*, his appetite good, and his digestion easy. The joys of the table are to him of importance; they tune his mind to serenity, and his soul partakes in the pleasure which they communicate. He does not eat merely for the sake of eating; but each meal is an hour of daily festivity; a kind of delight, attended with this advantage with regard to others, and it does not make him poorer, but richer. *He eats slowly*, and has not too much thirst. Too great thirst is always a sign of rapid self-consumption. In general, he is serene, loquacious, active, susceptible of joy, love and hope, but insensible to the impressions of hatred, anger and avarice. His passions never become too violent or destructive. If he ever gives way to anger he experiences rather an useful glow of warmth, an artificial and gentle fever, without an overflowing of the bile. He is fond also of enjoyment, particularly calm meditation and agreeable speculation; is an optimist, a friend to nature and domestic felicity, and has no thirst after honor or riches, and banishes all thoughts of to-morrow."

I would add that in my opinion every person, at least every one that is not afflicted with organic trouble, or who has not neglected too long the observance of the laws of nature, has within himself the power to prolong his own existence, as well as to improve and to secure his own good health. In life insurance we find that the best risks are not the most robust men, not the athletes, but the men who, without organic trouble or inherited tendencies to disease, are yet obliged to take care of themselves—men who, like Cornaro, live with sobriety.

I close this paper with a quotation from Addison, who in his "Vision of Mirza," must have had in mind a mortality table.

"The bridge thou seest, said he, is *Human Life*; consider it attentively. Upon a more leisurely survey of it, I found that it consisted of *three-score and ten entire arches*, with several broken arches, which, added to those that were entire, made up the number *about a hundred*. As I was counting the arches, the Genius told me that this bridge consisted at first of a *thousand arches*, but that a great flood swept away the rest, and left the bridge in the ruinous condition I now beheld it. But tell me further, said he, what thou discoverest on it? I see multitudes of people passing over it, said I, and a black cloud hanging on each end of it. As I looked more attentively, I saw several of the passengers dropping through the bridge into the great tide that flowed underneath it; and upon further examination perceived that there were innumerable trap-doors that lay concealed in the bridge, which the passengers, no sooner trod upon but they fell through them into the tide, and immediately disappeared. These hidden pit-falls were set very thick at the entrance of the bridge, so that throngs of people no sooner break through the cloud but many of them fall into them. They grew *thinner toward the middle*, but multiplied and laid closer together toward the end of the arches that were entire. There were, indeed, some persons, but their number was very small, that continued a kind of hobbling march of the broken arches, but fell through one after another, being quite tired and spent with so long a walk."

Recommendations in Regard to the Care of Infants.*

CLEANLINESS.

To infants, cleanliness is life, filth is death. The child, to retain health, must be clean, and its surroundings must be clean. It needs a clean skin, clean clothes, clean water, clean food and clean air. It should be bathed night and morning in a warm room, away from any draught, and in water from which the chill has been taken. As the child grows older, and in the summer time, cooler water may be used. The body should be cleansed from head to foot, with a soft sponge, or a piece of fine flannel; use only a little pure soap, and

* Suggestions presented by the State Board of Health of Pennsylvania.

keep it away from the eyes. Dry the whole body with a dry, warm towel, using but little friction, for active rubbing and strong soaps are injurious to the skins of babies. In the summer time the child may be left in the cold bath ten or fifteen minutes, but a child should never become chilled while bathing. In all cases, when the bath seems to injure the child, consult the family physician.

Change the napkins as soon as soiled. Don't use them a second time until they have been washed. If possible, don't dry them in the same room in which the child lives.

THE PREMISES MUST BE KEPT CLEAN.

This applies to the house, yard, garden and to the neighboring streets, alleys, gutters and lots. Keep the house cool, clean and well aired. Never permit it to get musty and damp. Keep the cellar clear of all decaying vegetables or other offensive or moldy material; whitewash it frequently, and see that it is well aired. Death lurks in the darkness and dampness of many a cellar. In country places throw the kitchen waste as far as possible from the house, the cistern and the well, and frequently disinfect the place with quicklime or cover it with fresh earth. Locate the privy as far as possible from the house and the well, and keep it free from all odors by the frequent use of copperas, lime or fresh earth, or coal ashes. The dry earth system only should be used in the country and in villages. Keep every part of your own premises clean, and insist that your neighbor does the same with his.

FRESH AIR.

Let the child be in open air as much as possible, except on very cold, very windy, wet or damp, chilly days. Do not take it out too early in the morning, or keep it out late at night, or in the middle of the day expose it to the direct rays of the sun; with these precautions, if in cold weather it is thoroughly bundled up in woolen clothing, it can hardly be out of doors too much. Except in the hottest part of the day, exposure of the child to the direct rays of the sun will do it good. A brown skin means health to a child. Air should circulate freely through the house, the windows being opened for this purpose every day. Especial care should be taken to give the child an abundance of fresh air when it is sleeping, care being taken to avoid draughts. When the air in the house seems damp, it should be dried by a fire in the grate or stove. All residents of cities, who can afford it, should send their children to the country during the heated season.

CLOTHING.

The clothing of infants should be light and loose, permitting free use of the limbs. Dr. Felix Oswald truly says: "If many children could use their limbs more they would use their lungs less." They should be clothed much more lightly in summer than in winter; for, in the one season, cold kills many babies, and in the other heat kills them. All sudden changes of temperature should be promptly met by appropriate changes of clothing. Don't permit the common deadly practice of leaving the arms and legs bare, but clothe every part, except the head, warmly. Woolen clothing is the best, and should always be worn in

the winter; and even in summer it is best that a thin flannel shirt be worn next the skin. If this is thin, it will not be much warmer than if of cotton, but very much more healthful. Many mothers make the mistake of *too warmly* dressing their babies and children in the summer months. The flannel worn should be thin in summer and thick in winter. Never permit the child to wear the same clothing night and day, but completely undress it at night, and hang up the clothing so that it will air through the night.

SLEEP.

Let babies and young children sleep all they will, for sleep is an absolute necessity for their vigorous development. They should regularly be laid to rest at stated times, away from noise and the light. The child, from the very first, should be taught to go to sleep in a cot, without being rocked, nursed or carried about. No kind of cordial, spirits, syrups, sleeping or soothing drops, or any other remedies should ever be given by the nurse or mother to make a child sleep. If the young child is sleepless, it is ill, and medical attendance should be summoned. It is a bad habit for mother and child to go to sleep while the child is nursing in bed. Children from two to six years of age are often cross and ill-natured for want of sufficient sleep.

NURSING.

A mother whilst nursing ought to live well and generously, but not carelessly or grossly. Spirituous or malt liquors should not be used unless prescribed by the family physician. The mother should remember that what would produce *colic* in the baby, if eaten by it, will *often* produce *this* trouble in it when eaten by *the mother*, and thus by care in her own diet she may save herself much trouble and her baby much pain. If she suffers from giddiness, palpitations, shortness of breath, night sweats, or feels exhausted as the child nurses, or if her milk seems to disagree with the child, she should consult a medical man concerning the propriety of weaning the child. Pure, healthy breast milk is the best food for babies, and so long as the child thrives upon it, and the supply is sufficient, it needs nothing else. Nurse a child at regular intervals; under two months, every two or three hours during the day and three or four times during the night; at six months, five or six times during the twenty-four hours. Do not fail to give the baby water to drink several times each day. Babies relish and need it as much as older people. Do not nurse the baby to stop its crying, but only at the regular intervals. A child should not be weaned suddenly, but by degrees. After the ninth month, it should be weaned; but never just before or during the hot season. Before the child is six months old, if the mother is weak, but her milk still agrees with the child, it may be fed on cow's milk, alternating with the mother's milk. If the supply of breast milk is very small, but still agrees with the child, it should still be continued as a safeguard against illness. The mother's own milk is usually to be preferred to that of a wet-nurse.

FOOD.

A very frequent cause of the early death of young children is improper feeding. The natural food for babies is the breast milk of its own mother; next, that of a wet-nurse; lastly, *unskimmed* cow's milk or goat's milk; the latter is very nourishing and easily digested. For young babies remember that milk, and milk only, should be used as food. They need no gruel, butter, honey or castor oil; these things are all worse than useless—they are dangerous. Too much care cannot be exercised to secure pure milk. It is now believed that milk derived from a number of cows is better than that from one cow. If from one cow, care should be taken not to get it from a cow which has been milking too long, since milk frequently deteriorates from this cause; also, when the milk disagrees with the child, it will be well to change the cow. As soon as the milk is received it should be placed on the stove and brought to a boil, then placed in the coolest place—on ice or in the well. The vessel in which the milk is kept should daily be scalded out with boiling water and cleaned with soap, being kept perfectly pure and sweet. Earthen or glass or stoneware vessels are preferable to tin ones for keeping milk in. *Never give a baby sour or musty milk*; it must always be sweet and pure, and freshly prepared each time; if sour, throw it away and get some fresh; it cannot be safely sweetened. When fed to the child, the milk should be diluted with one-fourth or less water, and a little sugar added, but before you add water be sure that the milkman has not previously added it. If the undiluted milk agrees with the child use it. Use "condensed milk" if the fresh cannot be had pure. Under six months, children can be stuffed with, but not nourished by, corn, flour, arrow-root, baked flour and all other kinds of starchy foods. These are of no value at all to children under six months, and they may be and often are starved to death on these things.

Where the child has cut its front teeth it should have some light food, as bread, baked flour or milk-biscuits added to its milk. Once a day it may have meat broth or beef tea, with bread or biscuits soaked in it, or the yolk of an egg lightly boiled. When it is a year and a half old it may have some fine-chopped meat, but milk should still be its principal food. At two years it may eat of cornmeal mush, rolled wheat, oat grits, etc.; but such food as solid meat and potatoes, fat pork and fish, which form the food of adults, should on no account be given to babies. Do not give any of the patented baby foods sold at the stores, *unless on the advice of your family physician*. Creeping and crawling children must not be permitted to pick up unwholesome food.

The nursing bottle needs special attention. It should be oval, with no corners or rough places in which the milk may lodge and become sour. A plain, black rubber nipple to slip over the mouth of the bottle is the best pattern. Never use the elaborate and complex nipples, with glass and rubber tubes attached, because they cannot be readily cleansed, and they also invite in the baby the habit of sleeping with the nipple in the mouth, a thing which should never happen. Both bottle and nipple should be thoroughly cleansed *in boiling water* after each using, and then kept in cold water to which a little baking soda has been added until used again.

SUMMER COMPLAINT.

July, August and September are the worst months, and the "second year" the dreaded period of the child's life. As preventive measures, are recommended: (1) The nursing of the child over the second summer, when this can be properly done, if her milk agrees with the child and the mother is not exhausted. (2) The wearing of a thin flannel shirt by the child all through the summer. It should be thin, and in hot weather *very thin*. (3) Feeding only milk or other food known to be fresh and absolutely pure. (4) Whenever possible, babies should spend the summer months in the country. If the above precautions could always be carried out, summer complaint would be almost unknown. With care the disease can be greatly diminished. At all events, during the summer months, give the child pure water to drink at frequent intervals, for it needs water to supply that lost by the perspiration. Bathe it in cool or tepid water twice a day. Keep it in the open air as much as possible, and where the air is pure. Don't permit it to have any sour, unripe, overripe or half-decayed fruits. Even ripe fruit may cause injury if the child be allowed to indulge at will. If the dejections are very offensive and the bowels tight, give a dose of castor oil or of spiced syrup of rhubarb on retiring at night. For pain in the bowels give a few drops of essence of peppermint in sweetened water. Ten drops may be given, and repeated as often as required, for this drug produces no bad results. Give no laudanum, no soothing syrups, no paregoric, no teas or any other drugs, medicines or remedies, unless directed by the family physician.

THE DISEASES OF CHILDHOOD.

It is the common belief that measles, scarlet fever, whooping cough, mumps, diphtheria and the other diseases of childhood are necessarily contracted by every child. This is a mistake. These diseases are all contagious, and pass from person to person by actual contact. By great care their spread may be much restricted and the lives of many children saved. When these diseases prevail in a community, it is best to withdraw the children for a time from the day- and Sunday-schools, and so far as possible to isolate them from other children. In no case should they attend the funeral of a person dead from any of the above diseases, and in case of scarlet fever and diphtheria, it is best for parents to remain away as much as possible from houses where they prevail, no matter in how light a form.

Hygienic Surgery.

BY JOSEPH F. EDWARDS, A.M., M.D.

If John Hunter or Sir Astley Cooper could, for a short time, visit this world again and witness the operations that are being daily performed by surgeons, they would stand aghast at what they would consider foolhardy recklessness. In the days that are gone it was considered almost certain death to

open the abdomen, and many of the operations that are now performed with impunity would have been regarded as downright murder by the surgeons of the last century.

This most beneficent surgical revolution has been brought about by the recognition of the potency of the invisible little bodies floating here, there and everywhere in the atmosphere, which we have come to call germs or bacteria. It used to be recognized that the wounds caused by serious surgical operations very frequently proved fatal; this fact was recognized empirically, but the why or the wherefore was not understood. To-day, we know that these untoward results were due to the blood-poisoning, so to speak, induced by the agency of the poisonous germs or bacteria that were deposited from the atmosphere upon the raw surfaces made by the surgeon's knife. The recognition of the cause of this surgical mortality opened the way to its prevention. "Antiseptic surgery," by which we mean that the surgeon uses every precaution to prevent the access of these germs to the wound, has opened up a field of usefulness in surgery, unthought of by the great leaders now dead and gone. Under these precautions the great operation of ovariectomy has become not only a possibility, but an almost everyday occurrence, and the numerous surgical operations by which women are relieved of suffering that had made life miserable and death desirable have become possible only because of our ability to keep these germs away from the wounds. We must remember that the atmosphere is full of germs or bacteria, many of them harmless, in fact necessary in the economy of nature; others potent for evil when introduced into the system. We must also know that it is not always possible for these dangerous bacteria to gain access to the system through the stomach or the lungs, but that they are freely absorbed and taken into the system through the raw surface that is made by the surgeon's knife in the course of an operation. Now, then, we can understand how vitally important it is that these germs should be destroyed, and how the life of the patient and the success of the operation depend thereon. But with all our antiseptic precautions, we are not always able to keep these omnipresent little pests away from our wounds; therefore, have I thought that if, in addition to our precautions, we would select a locality in which to perform our operations where these disease germs are very scarce, or nearly wanting in the atmosphere, the success of our operations would be greatly enhanced thereby.

There seems to be something in the atmosphere of the ocean that is antagonistic to these germs, for scientific observation tells us that in mid-ocean very few of these bacteria are to be found in the air. Putting these observations to practical use, my idea is that the seashore, because of its freedom from disease germs, would be a most desirable locality for surgical or gynecological operations. In addition to this one great feature, there is an additional advantage in selecting such a locality for our purpose. Serious depression always follows surgical operations, and much depends upon the ability of the patient to recover from this depression. It is well known that seashore atmosphere is a tonic atmosphere, which would make it most suitable to favor recovery from surgical

depression. Still further, it requires no professional knowledge to understand that the better the physical condition prior to the operation, the more likely it is to be successful; hence, is it obvious that a sojourn at the seashore for a short time prior to operation would place one in the best physical condition to withstand the shock and depression of, and to favor recovery from, serious surgical operations. A general acceptance of this doctrine would, I am sure, be a great step in the hygiene of surgery.

Looking Very Old for Twenty.

BY THE LATE DIO LEWIS, M.D.

A VERY thin young lady, of about 30 years, with a promising beau, came to consult about her "skin and bones." I had frequently met her when she seemed even more emaciated, but now she "would give the world to be plump." Sitting down in front of me, she began with, "Don't you think, doctor, that I look very old for 20?"

I admitted that she looked *rather* old for 20.

"Can anything be done for me? What can I take for it? I should be willing to take a hundred bottles of the worst stuff in the world if I could only get some fat on these bones. A friend of mine (her beau) was saying yesterday that he would give a fortune to see me round and plump."

"Would you be willing to go to the Cliff Springs in Arkansas?"

"I would start to-morrow."

"But the waters are very bad to drink," I said.

"I don't care how bad they are; I *know* I can drink them."

"I asked you whether you were willing to go to the Arkansas Springs to test the strength of your purpose. It is not necessary to leave your home. Nine thin people in ten can become reasonably fat without such a sacrifice."

"Why, doctor, I am delighted to hear it; but I suppose it is a lot of some awful bitter stuff."

"Yes, it is a pretty bitter dose, and has to be taken every night."

"I don't care; I would take it if it was ten times as bad. What is it? What is the name of it?"

"The technical name of the stuff is 'Bedibus Nine-o'clockibus.'"

"Why, doctor, what an awful name! I am sure I shall never be able to speak it. Is there no common English word to it?"

"Oh, yes. The English of it is, 'You must be in bed every night at 9 o'clock.' We doctors generally use Latin. 'Bedibus Nine-o'clockibus' is the Latin for 'You must be in bed every night by nine o'clock.'"

"Oh, that is dreadful! I thought it was something I could *take*."

"It is. You must *take* your bed every night before the clock strikes nine."

"No; but what I thought was that you would give me something in a bottle to take."

"Of course, I know very well what you thought. That's the way with you, all of you."

One person eats enormously of rich food till his stomach and liver refuse to budge; then he cries out, "O doctor, what can I *take*? I must *take* something."

Another fills his system with tobacco until his nerves are ruined; and then, trembling and full of horrors, he exclaims, "O doctor, what shall I take?" I write a prescription for him—*Quitibus Chawibus et Smokibus*.

I will suppose my patient is not a classical scholar, as I am sure my reader is, and so I translate it for him into English. He cries out at once, "O doctor, I thought you would give me something to take!"

Another sits up till 13 or 14 o'clock, leads a life of theaters and other dissipations, becomes pale, dyspeptic and wretched, and then flies to the doctor and cries out, "O doctor, what shall I *take*? what *shall I take*?"

"Now, madam, you are distressed because your lover has been looking at your 'skin and bones.'"

"But, doctor, you are entirely"—

"Oh, well, we'll say nothing about him, then. But tell me, what time do you go to bed?"

"As a general rule, about 12 o'clock."

"Yes, I thought so. Now, if you will go to bed every night for six months at 9 o'clock, without making any other change in your habits, you will gain ten pounds in weight, and look five years younger. Your skin will become fresh and your spirits improve wonderfully."

"I'll do it; though, of course, when I have company, or during the opera, I can't do it."

"It is regularity that does the business. To sit up till 12 o'clock three nights of the week, and then get to bed at 9 o'clock four nights, one might think would do very well, and that at any rate it would be 'so far, so good.' I don't think this every other night early and every other night late, is much better than every night late. It is regularity that is vital in the case. Even sitting up one night a week deranges the nervous system for a whole week. I have sometimes thought that those people who sit up till 11 or 12 o'clock every night get on quite as well as those who turn in early six nights, and then sit up once a week till midnight. Regularity in sleep is every whit as important as regularity in food."

At length my patient exclaimed, "Doctor, I will go to bed every night for six months before 9 o'clock, if it kills me, or rather if it breaks the hearts of all my friends."

She did it. Twenty-one pounds was the gain in five months. Her spirits were happily enlivened, and she spent half her time in telling her friends of her delight with her new habits. She had no further cause to complain of skin and bones, and she had the special gratification of appearing more attractive in the eyes of her lover. He, like a sensible man, when he saw the good effects of the nine-o'clock-to-bed arrangement, heartily approved of it, and became a convert himself.

Artificial Modifications of Climate.

BY SAMUEL WOLFE, M.D.,

Of Philadelphia.

Professor of Physiology in the Medico-Chirurgical College.

IN estimating the factors that enter into the production of climate, we find them divisible into two classes, one of which is entirely removed from the control of man, the other capable of modification at his hand. The movements of the earth, on which depend the succession of day and night and the course of the seasons, the solar radiation, the latitude, the height above sea level, the proximity to great bodies of water, the relative situation, as determined by the configuration of the earth's surface, whether on a low plain or a great prairie, on a high table-land or in a valley, on a hillside or mountain-side, or on a mountain-top, are incidents beyond his control.

While these are among the main agencies upon which depend the conditions of the atmosphere, the character of the surface-covering—the determination of the vegetation that shall grow, and the structures that shall be erected—must be credited with the power of largely modifying the capacity of the earth for absorbing, radiating, reflecting and conveying heat, and more indirectly, though just as certainly, of controlling currents of air, humidity, rainfall, and other results, the combination of which constitutes what we call climate. This feature admits of decided control by man.

Within limits, then, climate may be said to be artificial; and the individual, the community, the municipality, the State, the nation, may within these limits be held responsible for its character. However small may be the influence thus exercised in a given locality, it is of such a nature that besides its local effect, there will be diffusion, and in the aggregate, extending over a wide range and through a long period of time, this factor exercises a telling force. History will warrant the assertion that no spot can be so highly favored by nature with climatic excellence but that a mistaken policy may bring about its ruin, and make it well-nigh uninhabitable, while, on the other hand, the veriest desert seems not beyond reclaim under the wise and energetic application of sound principles.

“The wind bloweth where it listeth, and no man knoweth whence it cometh or whither it goeth.” To claim, in the face of this passage from the sacred writings, that the operations of man can influence the force, the direction or the origin of atmospheric currents, may seem to some sacrilegious, or, at best, but an idle assumption. But just as surely as organisms far below him in the scale of life may, by persistent energy, through the cycle of ages, build up in the midst of the ocean continents on which man may live, so may he, in the cycle of years, by his industry, transform and subvert the winds that sweep over them.

If a sea-wall ten or twenty feet high were erected along the beach on the

New Jersey coast, the tens of thousands who at this very moment are being fanned by the sea breeze, and who to-night will sleep under the play of the refreshing land-breeze, might as well retire to their homes, in this and the other large cities from which they have poured out, so far as climatic advantages could be realized on either side of the wall.

The little town in the valley, shaded by the forest on the mountain-side, will continue to have cool, refreshing nights during the summer, and escape the blighting frosts of early autumn, until some enterprising syndicate shall sally out and devastate the mountain of its forest covering. Then the mixture of torrid heat and chilling damp which will constitute its capricious summer, will form a fitting prelude to the blight and frost that prematurely destroy, with the approach of autumn, its sparse vegetation.

If William Penn could have stepped out of the Blue Anchor Tavern 208 years ago, and could have called the present city with its million and more of inhabitants into existence, what a delightful climate they would have found themselves in, with the western breezes floating in through the immense forests covering the eastern slope of the Appalachian system, cooled, moistened and scented by the vast expanse of leaf, and the almost countless rivulets springing from the mountain and hillsides! . . . Winter merging during March into spring, by gentle, easy gradations, with light and frequent showers, and by regular rise of the daily average, reaching the summer climax of probably no more than eighty degrees as a maximum and seventy-five degrees as a mean temperature. The fitful changes so characteristic of our Fall, with frosty nights early in September, even in August and July, prolonged absence of rain, or the ruinous eastern and southern storms, would be less unpleasantly familiar, and in all probability, when occurring, would be less violent and destructive. Instead of a temperature at zero on Thanksgiving Day, and the doors and windows open and sitting room on the front door step at a premium on Christmas and New Year's Day, the latter part of November would introduce us to our light overcoats, fall underwear and the first killing frosts, while the Holidays would unflinchingly have us clothed in with snowy covering and frozen soil.

Through January and early February winter would remain an established fact, neither mellifluent nor blizzardly. Sleighing, skating and tobogganing could be counted on with a certainty to endure for weeks, instead of hours. Not only would youth have its assurance of a full season of sport, but trade would flow in an even and regular channel, which, with the present vagaries of the season, is much disturbed.

The above is not purely a fanciful sketch. The poetic descriptions of the seasons, as we have them in literature, are not entirely evolved in the imagination. They have been observed, but in this age they seldom are.

I do not wish to be understood that if the primitive conditions of our rural districts had been maintained, one season would be the exact counterpart of another, or that an ideal type would prevail. The equinoctial storms, the dog-days, the high winds of October, the Indian summer, would all materialize. But that the extremities of heat and cold, the more rapid variations of temper-

ature, the long droughts and the violent storms of rain and wind to which we are subject, would have less favorable conditions if an adequate forest area, and what goes with it, a steady supply of water in our creeks and rivers, had been preserved, hardly admits of question. The influence of forests on rainfall, winds, temperature and, indirectly, on economic and sanitary questions, is receiving intelligent and practical study, but the conclusions that have been reached have as yet not been receiving from our legislative powers the attention which they deserve.

The city of Philadelphia, by a master stroke of policy, has secured a public park which for all the purposes of such an institution, æsthetic, economic and sanitary, is probably not excelled on the face of the globe. The city is moreover peculiarly fortunate in the natural beauty and picturesqueness of its immediate surroundings. For many miles beyond its limits every line of railroad, and every carriage-drive leading out, carries the traveler through regions of delightful scenery. The wisdom of government and the beneficence of nature have conspired together to the advantage of the present and of future generations.

But has all been done that was within reach? Are our public authorities fully alive to their duties in this direction? It is a significant fact that the oldest portion of the city is well furnished with magnificently-wooded squares, having Independence, Franklin, Washington, Rittenhouse and Logan Squares, all within the old lines formed by Vine Street on the north, and South Street on the south, while in the newer portions there are practically none of these open spaces, unless we count the cemeteries, the Girard College grounds and similar institutions.

If, as the line of dense population had extended, grounds had been secured for this purpose, both the attractiveness and the health of the city might have been usefully served. This policy might still be applied to such portions as are now rapidly building up.

Some splendid opportunities still exist for locating green and blossoming spots in the denser sections. Girard Avenue, a portion of South Eleventh Street, and when the old market-houses shall finally be removed, portions of Callowhill and Second Streets, all offer themselves to better uses than a wide and meaningless expanse of Belgian blocks. The recent treatment of Spring Garden Street may have had for its object the saving of a few thousands as an offset to the million of shortage of Bardsley, but it is likely that the average citizen would be more ready to condone his misappropriations while viewing the erection of a green plaza or flower-garden, or the novel sight of tree or shrub-planting, than when his thoughts keep time to the monotonous stroke of the Italian's rammer.

A rounded or oblong space for ornamental vegetation, and a small fountain at each corner of the wide pavement surrounding the City Hall, would materially enhance the beauty of the place and serve to temper the atmosphere.

Where the oblique streets intersect simultaneously a north-and-south and an east-and-west running street, a good instance being Broad Street, Fairmount

Avenue and Ridge Avenue, a large space is found which could be utilized for trees, shrubs or grass.

For planting along the sidewalks careful choice should be made of such varieties of trees as will not grow too high, or spread their branches too widely. With proper precautions in selection there are but few of the main streets, outside of the business center, which could not be thus utilized for equalizing the temperature and humidity of the atmosphere, as well as for enhancing the beauty of the city.

I conclude with these propositions :

(1) The climate of a country, of a State, or of a municipality, can be affected by its policy.

(2) Legislative measures, stimulating favorable and repressing unfavorable modifications of climate, are worthy the attention of law-makers.

1624 *Diamond St.*

Hot Milk and Vichy.

"There are a great many men who are overworked and underfed," says a prominent New York physician. "They think they are too busy to eat lunch at midday, and resort to stimulants as a substitute for food. It only takes a minute to step into a bar-room and take a drink. This makes them feel better for the time, but the effect soon passes away, and another is taken to get rid of the empty feeling. The habit grows until it takes eight, ten or more drinks a day to keep them going.

"Alcoholic stimulants are the worst thing in the world for an empty stomach, finally causing catarrh of the stomach, interfering with the secretions of the liver, and destroying the ability to assimilate food. When a man comes to me in this condition the first thing I do is to cut off his whisky or whatever stimulant he is addicted to, and substitute food for it. I can't substitute solid food, because his stomach won't retain it. I must get him to take something that it will. This is where hot milk and vichy come in. Cold milk is too harsh; it shocks his weakened stomach. Hence I give it to him hot. Vichy lightens and livens it—makes it more easily digested.

"I tell him to take a glass, two-thirds milk, one-third vichy, twice a day; to order it over a bar, anywhere he can get it, and to let whisky and all stimulants severely alone. If he obeys the orders I will cure him and save his life.

"A good many men among my own patients, fast growing prematurely old and bringing upon themselves a multitude of ills by the steady and excessive use of alcoholic stimulants instead of the nutritious food which they should take, have been reclaimed by the use of hot milk and vichy. If you find you are losing your appetite for food and correspondingly gaining that for alcoholic stimulants, try it. It will do you good."

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EDITORIAL.

Vacation Time.

WE have received a most readable and valuable little book on "Vacation Time," containing most seasonable and valuable hygienic suggestions, several of which we have incorporated in THE ANNALS. Dr. H. S. Drayton is the author, and Fowler & Wells, New York, the publishers; the price is twenty-five cents.

The Nursing of Infants.

A LADY of intelligence recently told one of our patients that "it was suicidal to her and ruinous for her baby" for her to be nursing a splendid big baby 8 months old. This is a popular error that deserves unqualified condemnation. If there is one fact more firmly established than another in the care of infants, it is that nature intends that they shall be suckled just as long as it is possible for the mother to do so. Of course, if the maternal milk does not thoroughly nourish the child, then it must be supplemented; but so long as it does do what nature intends that it should, then there is absolutely nothing that can adequately take its place.

The Philosophy of Life.

WE cannot, of course, all be philosophers, in the ordinarily accepted college definition of the term; we cannot all be profound thinkers upon the various and intricate problems of life, and it is fortunate that we cannot, for such would result in doing away with the hearty, active, zealous, indefatigable workers, who make progress, substituting therefor a race of cynical misanthropes, miserable to themselves and making misery for all about them. A deeply profound philosopher, he who can philosophize upon life and distill the gems therefrom, is a man happy to himself and productive of happiness to those about him; the less profound thinker, he who can dissect the frailties and incongruities of humanity, who is ever ready to dilate upon the shortcomings of mankind, is ever a menace to himself and the happiness of his kind; he is ever pointing out unpleasant and unwelcome facts until he becomes literally a bore and a nuisance. Such philosophers are not desirable acquisitions to society, and we are better off without them.

There is a, so to speak, superficial philosophy (superficial because it does

not require deep thought) which causes us to look upon the brightest aspect of everyday life and everything that occurs therein, and this philosophy it is that is within the reach of all, and which constitutes the only real, true, beneficent philosophy of life. "There is no such thing as evil," says a noted thinker; "everything is good; some less good than others, but nothing absolutely evil; good only exists." So, to the man who will only so view it, to the everyday philosopher, there is no aspect of life so miserable but that it might be infinitely worse, and, so viewed, that which has seemed almost unbearable becomes, by comparison, really pleasant.

The tendency of to-day is for each person to belittle his happiness and magnify his misery until he convinces himself that he is the most unhappy of mortals. There is no philosophy in such a course; it does not better his position, while it does add to his discomfort. If, on the contrary, he would reason with himself and come to always realize that no matter how unfortunate might be his position it could be much worse, then, indeed, would he be ever happy, because he would be able to discern a cause for happiness in every situation of life. Temperament, we admit, has much to do with the ability to so reason; but it is not all requisite; the average individual has it in his power to so cultivate this faculty that he may become truly a philosopher and secure for himself pleasure and contentment where previously there have been but misery and discontent. Try it.

Ancient and Modern Athletics.

PLEASURE, health, exercise, physical improvement—such were the characteristics of athletics as we knew them in boyhood, which, though not such a great time back, we are calling "ancient." Overstrained and enlarged hearts, broken noses, sprained fingers, lost teeth, bruised shins, excessive muscular development, followed by premature physical collapse—such are some of the distinguishing features of athletics as practiced to-day.

Is it not a strange fact that humanity, as a class, seems to abhor moderation? Excess, one way or the other, seems to be the guiding instinct of mankind. While we are willing to admit, for the sake of argument, that the athletes of our day may have been "excessively lazy," we, at the same time, must hold that the athletes of to-day are "excessively foolish." We recall how it used to consume a whole afternoon to play a game of baseball, and how the score would stand, maybe, 50 to 10; but, oh, what real fun we had! It was not necessary for our catchers to wear masks, for we had no "cannon-ball" pitchers in those days; in fact, we vividly remember what an excitement was created throughout college when our crack catcher had two teeth knocked out by an exceptionally swiftly-thrown ball, and we do not fail to remember that this was the only serious baseball casualty that occurred during our four years' residence in college. Our players were not everlastingly on the strain, both physical and mental; the monotony of blind obedience was frequently varied by wordy and windy disputes with the umpire, and fully as much time

was consumed in lolling upon the ground as in active work at the game. We admit that there was less *business* about the game of baseball in times gone by than at present, but we strongly insist that there were much more fun and health. When we played football, our aim was to kick the ball; to-day, the main object of the game seems to be for the players to kick and punch and bruise and maim each other; in truth, we fail to see why they have a ball at all. So is it with all athletic sports. It is useless and would be tiresome for us to enumerate the abuses in each instance, as they are patent to the observer, the point we would desire to make being that athletics, as practiced to-day, are injurious to the physical welfare of mankind. This we say, knowing that we are very likely to be contradicted by those who are making physical culture a special study. Unfortunately, specialists in any and every line are prone to view all questions as influenced and colored by their special study. The ardent lover of physical culture is too likely to see health and longevity in largely-developed external muscles, forgetting or ignoring that, after all, these muscles are but means of motion; overlooking the internal, vital organs, the generators of vitality, which have often suffered in their integrity that the visible muscles may become prominent. Of course, the director of physical culture who is a physician, or who has a knowledge of physiology, or who is blessed with "common sense," will not and does not fall into this error; but, in this day of craze for physical development, it is only the exceptional individual, comparatively, who has the good fortune to develop under such intelligent guidance. The masses "train" themselves, and we have no hesitancy in asserting that the unguided athletic enthusiast of 20 years of age, of to-day, is surely training himself to a life of invalidism at 40. If we could induce our young people to adopt a "happy medium" it would be well; but this, we fear, is impossible, hence we would say that of the two extremes the old-fashioned *lazy, indolent, all-afternoon* athleticism of our boyhood days is much safer and more desirable, from a physically healthy point of view, than is the sixty-mile-an-hour, mad, wild, enthusiastic, physically-damning training of the present day. Let us ask the parents of our young to seriously consider the hints we have thrown out.

The Most Important Department of Medicine.

THOSE of us who are interested in the subject of hygiene; those of us who have reflected and read upon the subject, after having had some years of practical experience with what we might call the "*drug treatment*" of disease, such of us are prepared to claim, because we believe, and to adduce arguments to substantiate our claim, that of all branches or departments of curative art the hygienic is the most fruitful of good results. We are fully satisfied of this fact, but, like the good soldier who is always glad to be able to even more strongly fortify his already well-fortified position, we are always gratified when we encounter a corroboration of our views from an authority so high that his dictum will carry conviction to those who may be as yet unconvinced.

Such an exceptional authority we now have in the last edition of Professor H. C. Wood's "Therapeutics." Dr. Wood, we all know, is recognized, the world over, as the pinnacle of authority on the treatment of disease, and in the preface to the last edition (the seventh) of his standard work we find the following pregnant sentences: "*There has been, during the last decade, a special growth in the appreciation by the medical profession of the value of remedial measures other than the administration of drugs.*" . . . "*In the present volume this formerly SECOND portion of the book has been made the FIRST, and its scope has been much extended.*"

It cannot be possible for any well-educated, thinking, reasoning physician to longer doubt, in the light of latter-day developments, that the scientific, reasonable, rational, common-sense treatment of disease is to be found in the hygienic, supplemented by the drug, rather than in the drug, supplemented by the hygienic treatment.

For example, let us assume that dyspepsia is a disease; of course it is due to a cause; will any drug cure the dyspepsia so long as the cause remains? Most emphatically no; but if the cause be diligently and intelligently sought out and removed, then some of our drugs will *help* us to cure the disease. So is it with every diseased condition of humanity. We must always ascertain the cause and remove it, so far as possible, else our labors will be of no permanent avail. It is true that drugs will frequently help us to remove the cause and to neutralize the effects of the cause, and, so far, they are most valuable. We do not mean to say that drugs are useless; far from it; but we do mean to say that they are useful only in so far as they are agencies designed to *help* to overcome morbid conditions that have been brought about by the violation of natural laws. We must ever remember that disease is an impossibility when the laws of nature are being literally complied with; every case of sickness implies a previous violation of these laws. The hygienic treatment, as we understand it, consists in ascertaining the nature of this violation and so regulating the life of the patient that its evil effects will be nullified; and in doing this we are frequently called upon to summon to our aid the use of drugs. The disregard of natural laws has brought about an unnatural condition of the system, and we must use unnatural means to help us to return the human machine to the railroad of nature.

Our idea, then, is that the hygienic treatment of disease is not only the most important branch of the curative art, but that it is the only method by which truly permanently satisfactory results can be obtained, and we feel that the rational sphere of drugs is a part of this hygienic treatment, but that the blind, empirical, routine drug treatment of disease that has held sway in the past has no foundation in science, common sense or practical results.

CLEAN out the well just as soon as it can be done, and there will be less danger from typhoid fever and other diseases. A well should be cleaned out at least once a year, no matter how clear the water appears.

NOTES AND COMMENTS.

The Qualifications of a Physician in Olden Times.

A statute of Henry VII ordains that the practice of the healing art shall be limited to those persons that be profound, sad and discreet, grandly learned, and deeply studied in physic.

Milk Gravy.

One pint of good, sweet milk and two teaspoonfuls of white flour to each pint of good milk. Dissolve the flour in a little cold milk and then stir this into the hot milk and mix the whole together and let it boil up once; then immediately remove from the fire and serve.

A Curious Comment on the Accuracy of Vital Statistics.

The New York City Board of Health notified physicians that there was a neglect in reporting births. The result of the notice was an increase in births in two succeeding weeks of from 697 to 1,288.

Tomato Sandwiches.

Slice some ripe tomatoes and pour over them a very little vinegar and oil, and sprinkle lightly with pepper. Prepare bread and butter for the sandwiches, and lay the tomato slices between the slices of bread. Thin slices of cucumber may be added with advantage.

Lime in the Eyes.

Fortunately, it is a rare occurrence for one to have lime thrown in his eyes, and we hope that it will never be the ill-fortune of any of our readers to be so afflicted; however, as it may occur, it is well to know that a solution of sugar and water will act like magic in soothing the pain and irritation.

Isolation after Diphtheria.

For four weeks after a child begins to recover from diphtheria it should be kept away from all other children. For this length of time the germs linger about the patient, who is, of course, capable of spreading the disease. Not within five weeks after recovery should a child who has had this grave malady be allowed to return to school.

Precaution Against Red Ants.

Red ants can be most effectually kept out of the sugar and other food by placing the articles in a cupboard, or on a table that is supported by legs standing in dishes of water. The ants will not cross the water for even the most tempting sweets. The ant traps do not exhaust the supply, while camphor and other substances used to keep them away are about as bad as the ants.

Idiosyncrasy Toward Eggs.

Dr. J. Ch. Dodds relates, in the *Journal of the American Medical Association*, the case of a lady, 27 years of age, who, since a child, has never been able to eat an egg without suffering an attack of cholera morbus (to all appearances). The same condition occurs when she eats them in any form, as cake, etc., or any method of preparing them. The lady is, in all other respects, normal and in good health and development.

Sanitary Administration.

Sanitary administration means not only personal comfort and health in the family, but economy to the State and family. Two hundred and fifty thousand lives lost, three million cases of sickness and \$20,000,000 in money are traced, in one decade in England alone, to neglect of sanitary care. The sword and musket are terrible ministers of death; but even in armies, where battles kill one person, disease kills at least three.

Consumptive Sanitarium on a Novel Plan.

At Reinickendorf, a village near Berlin, a consumptive sanitarium has been erected on a novel plan, utilizing the supposed therapeutic influence of association with certain animals. A large cylindrical building is occupied in the upper part by the patients, while the ground-floor is given up to the accommodation of large numbers of milch cows, the exhalations from which are conducted to the apartments above. A whey and buttermilk diet is also contributed by the under-boarders.

Danger of Poisoned Fish.

The *Lancet* contains a warning against the use of iced fish. Ice spoils the freshness, firmness and flavor of fish by rendering it, prior to putrefaction, insipid, soft and flabby. Where fish is preserved on ice, it appears that the ice only favors putrefaction by furnishing a constant supply of moisture, carrying with it the putrefactive bacteria derived from its unclean surroundings, so that this iced fish remains covered with fresh solutions of filth, pregnant with putrefactive bacteria. On the other hand, keeping fish dry and cold can in no way favor putrefaction.

The Æsthetic Aspect of Eating.

We know that many people are governed by the looks of an article on the table in their estimate of its quality: a dish of oatmeal hurriedly served in the rough may be rejected; whereas the same oatmeal turned out of a graceful form into a china dish, and with sugar bowl and milk pitcher flanking it on either side, would be promptly partaken of. Any of the grains may be manipulated in a hundred ways, and yet simply and with excellent results. The same principle applies to the commoner vegetables; each is susceptible of many methods of treatment.

Quassia for Lice.

The *Medical Brief* says that lice and other parasites can be removed from the hair quicker and better by a decoction of quassia, to which a little borax and glycerine have been added, than by almost any other known means.

Medical Practice in Kentucky.

The Kentucky State Board of Health has passed a resolution to place upon the list of medical colleges whose diplomas are to be certified and indorsed for registration under the laws of the State, only such colleges as shall, after the session of 1891-92, exact of matriculates and graduates a minimum of requirements not less than those required by the American Medical College Association.

To Clean Straw Hats.

Straw hats may be cleaned and bleached as follows, according to Dieterich : A sponge is moistened with a solution consisting of ten parts sodium thio-sulphate, five parts glycerine, ten parts alcohol, and seventy-five parts water. The hat is then well sponged with this solution, then put into a dark, cool place for a day, and then is once more thoroughly gone over with a sponge soaked with a solution containing ten parts alcohol, two parts citric acid and ninety parts water. After again allowing to remain for some time in a cool place, the hat is ironed.

The Desert as a Hothouse.

The San Francisco *Bulletin* says that if the Colorado Desert is flooded and becomes an inland sea, as is now threatened, it would be a very heavy blow to that section of California. The desert was once the bed of a sea, and the sand is full of ocean richness, making it especially valuable for agricultural purposes. Irrigation alone is needed to make the whole desert a great hothouse, adapted to the raising of early fruits and vegetables. Under present conditions the desert is a storehouse of heat which warms San Bernardino and San Diego.

A Sanitary Barber.

The Paris correspondent of the *Journal of the American Medical Association* records the first instance known in France, so renowned for its coiffeurs, of a barber applying the principles of surgical cleanliness to the purifying of the weapons with which he assails the faces and scalps of hirsute humanity. The name of this perfumed emulator of Lister is not stated, but he applies his aseptic scissors, razors and brushes at Lyons. His razors are mounted in aluminium, the scissors are nicked, the brushes being provided with bristles which are screwed on to the wood, thus avoiding the necessity for the employment of glue or stitches. After use, these instruments are well washed and then subjected to a temperature of 120° C., in an oven inclosed in a layer of glycerine heated by a range of gas jets.

Mental and Physical Vegetation.

A prominent New York physician, whom we recently requested to prepare an article for *THE ANNALS*, excused himself for the present, on the ground that it was his invariable rule to "vegetate" during the summer. For ten months of the year he *lives*; for two months he *vegetates*. Do you know how to vegetate? No; well, it consists in reducing your life to a mere existence, avoiding everything but the simple acts of existence, such as eating, sleeping and the like. It would be well if all of us, who can afford to do so, would reduce ourselves to a state of vegetation during the summer; we would *live* all the better when we got to work again, and our lives would be thereby greatly prolonged and our health improved.

Overcrowded Tenements.

Charles Dickens inveighed very strongly against the practice, as prevalent in his day as in ours, of overcrowding the poor. The following passage occurs in his "Old Curiosity Shop": "Oh, if those who rule the destinies of nations would but remember this—if they would but think how hard it is for the very poor to have engendered in their hearts that love of home from which all domestic virtues spring, when they live in dense and squalid masses where social decency is lost, or rather never found—if they would but turn aside from the wide thoroughfares and great houses, and strive to improve the wretched dwellings in byways where only poverty may walk, many low roofs would point more truly to the sky than the loftiest steeple that now rears proudly up from the midst of guilt and crime and horrible disease, to mock them by its contrast."

Keeping Baby Books.

A writer in *Healthy Homes* tells of a "baby's book" that she is keeping, wherein she records all bright sayings; then a running narrative is kept, not daily, of course, but semi-occasionally, of baby's first visit to his grandma, of his first ride in the cars, of his changes in residence, of his weight at different periods, etc., etc. When the first photograph was taken, the photographer finished one copy all but mounting it, and that was carefully pasted on a page, with the date underneath. On another page she held his little hand, with the fingers spread, while she traced the outlines of it. She did the same with his foot. A lock of his baby hair is coiled on another page. She keeps a record of his ailments and the treatment that seemed most successful in each case. When he first said "mamma" is duly recorded, as also his first steps "loney-loney." The other day she jotted down his complete vocabulary to date, and found 105 words. Her baby is now 22 months old. If he should die, she would not take a small fortune for her baby-book. How many bright and quaint things are said by our little ones that soon pass from mind and are lost forever! They can all be preserved in this baby-book. And when baby becomes President of the United States, what an interesting chapter his biographer will be enabled to write on his "Days of Boyhood."

An Ounce of Prevention.

People are willing and eager to speak in warmest praise of the physician who has brought them safely through some awful crisis of disease, and rightly. But how seldom do they recognize or appreciate that greater skill which detects disease in its early stages, and so promptly and wisely treats it that the patient does not go down into the shadow of death, says the *Healthy Homes*. The greatest skill is habitually displayed in treating the everyday ailments, so commonly regarded as trivial and unimportant; and almost every physician of large experience will tell you that much of his best work passes unrecognized and unthought of. Indeed, his greatest, many times his only, reward comes from the consciousness of a good work well done.

The Duty of Health.

There are many persons in this world whose whole lives, with one single exception, are actuated by motives of duty. Thoroughly conscientious, such persons would not do wrong for all that the world could give. Yet it is not uncommon to find such really good persons utterly regardless of health. Now, to our way of thinking, a man's first duty to his family, to his country and to himself, is to carefully preserve his health. Without health a man or woman cannot be an ideal parent, citizen or friend to himself or to any one else. Has the matter ever presented itself to you in this light? If not, then let us ask you to reflect, and you will agree with us that the preservation of health really suggests itself as the first duty of every good man and citizen.

Freaks of Famous Men.

Cardinal Richelieu, the famous French statesman, often gave way to irrepressible paroxysms of laughter after returning from the secret sessions of the council. If he had been specially clever in outwitting an enemy, he galloped round and round the billiard table, neighed like a horse, pranced and kicked out right and left like a charger caracoling.

The great Condé, while listening to a long-winded address of welcome from a village magistrate, amazed that worthy official by taking advantage of a low bow to leap over him. The magistrate, on recovering from his surprise, faced round and continued his speech, taking good care not to give the famous Marshal a chance for a second spring by making too low a reverence; but his caution was in vain. Condé grasped him by both shoulders and took another jump.

Prince Conti had the odd trick of barking exactly like a little yapping lap-dog, and not infrequently barked at a lady instead of answering her. Once he was seized with a desire to perform this strange antic while in the throne room of Louis XIV, but knowing how furiously le grand Monarque would have resented such an infringement of his royal dignity, Conti hurried to an open window and, leaning out, pressed his handkerchief over his mouth and barked softly to his heart's content.

A Good Hot-weather Dish.

The real hot-weather dish is the salad. It may be made, as a witty young authoress used to say, of "anything except old clothes." There is no vegetable, meat or fish, when cooked and cold, that will not, either alone or combined with other ingredients, form an agreeable salad. Few larders do not contain the elements for this addition to a meal left from the preceding meal or meals. Cooked red beets, cold potatoes, raw tomatoes and raw cucumbers, in equal parts, cut in dice, mixed with a cream or oil dressing and placed around the heart of a fine lettuce, is one of the nicest of combination salads, the real name of which is *Salad à la Dumas*.

Abortive Treatment of Whitlow and Gout.

The Paris correspondent of the *Journal of the American Medical Association* says that Dr. Gaucher, in writing on the abortive treatment of whitlow, states that, to effect this object, it is sufficient to moisten slightly the painful part and around it with a little water, and to pass over this surface a stick of nitrate of silver. In a few hours after, the skin becomes black, all pain disappears, and the inflammation is arrested. No dressing is required, and the black color disappears in six days. The author relates that in a case of a fit of the gout, the great toe was much swollen and painful to the touch, rather red, and was the seat of lancinating pains which prevented the patient from sleeping. The toe was painted as above described, and the next day it diminished in size, the pain completely disappeared a quarter of an hour after the painting, and the patient got up and attended to his occupation.

A "Healtheries" at New York.

An imitation of the London Healtheries has been set on foot in New York city, having its offices in the vicinity of Madison Square. Its projectors claim that while the primary operations of the Healtheries will be directed toward the procurement of a purer food supply, the general influence of the movement will be exercised over all departments of the public health. The company intends to have exact chemical and microscopical examinations made upon suspected articles of food and drink that are offered to the public, and promises to inform the individual consumer, upon application, of the results of such investigations. Inasmuch as a recent Food Exhibition yielded a net profit of \$10,000, it is probable that much of the scientific work above referred to can be accomplished free of cost to the general public. A certain proportion of the annual profits will be laid aside as a fund for a permanent building. A weekly or monthly food journal will probably soon be issued for the purposes of publishing the results of analyses and of announcing the new foods in the markets. There will be at the outset a board of three well-known chemists; all analyses made for the company must be signed by two or more of the board.

The Cure of Consumption.

We never have any sympathy with any *drug cure* for consumption ; but whenever we find anybody sensible enough to advocate *unlimited pure air*, as a cure, then do we feel ever ready to give all possible publicity to such recommendation. Now do we learn that a French physician, Dr. Briand, has invented a new cure for consumption which is full of common sense. Slowly accustoming the patient to the action of the air, Dr. Briand first opens the window, then moves the bed on which the subject is lying every day a little nearer to it. The last stage of the cure consists in sleeping in the open air, regardless of wind, rain or snow. It is said that the four patients who submitted to the kill-or-cure treatment last winter have gone home to their families rejoicing, every consumptive symptom having disappeared.

Nutrition and Disease.

Dr. J. D. Prettyman, of Milford, Del., has a most readable article in a recent issue of the *Medical Record*, in which he argues that where nutrition is perfect disease is impossible. He reminds us that the human body is made up of an aggregation of minute cells, each cell complete and individualized in itself. When disease germs enter the body they attack these cells, and the victory goes to the strongest. If the cell be perfectly nourished it vanquishes the germ and disease cannot occur; if the germ be the stronger the cell is conquered and disease results. Dr. Prettyman, therefore, concludes that all disease is really due to malnutrition. We hope to be able to publish an article shortly from Dr. Prettyman on this most important subject. In the meantime, we would ask our readers to reflect upon the great importance of this question of nutrition.

Building up Body for Winter.

Good habits and well-arranged diet should add somewhat to the solid reserve of capital of a man so that even at the close of a summer season, with a reasonable amount of work on hand during the greater part of it, he should find himself in good condition and able to meet the abrupt changes incident to autumn and winter.

The importance of nutrition should not therefore be lost sight of in summer any more than in winter, but the food should be, if anything, more easily digested, and this will be the case if it does not abound in heat elements, but rather in those of a cooling nature. Nature herself intimates, by the amount of provisions she gives in fruits and vegetables, that man is expected to draw upon her vegetable resources mainly for his warm-weather diet ; and it is a fact that they who live for the most part on cereals, fruits and the fresh products of the garden, enjoy the best health and experience the least discomfort from the heat. Your hearty eater, on a sweltering day, is constantly groaning about the way in which he suffers from the high temperature.

Canned Whole Tomatoes.

Select firm, ripe tomatoes ; scald them, and remove the skins and core. Fill your jars as full as possible with the tomatoes, and fill up with a little salt water up to the shoulder of the jars ; now put the jars in a boiler and pack them with cloths or hay ; fill the boiler with cold water up to the shoulder of the jars and let it come gradually to a boil. Let boil for fifteen minutes, then cover or seal your jars, and set them on a table covered with towels, well saturated with hot water. When cool, wrap each jar up in paper, and keep in a dark room or closet until wanted for use.—*Confectioners' Journal*.

Smokeless Fuel.

The Prince of Wales and Empress Frederick have initiated a movement which is destined to procure the abatement of the smoke nuisance and, consequently, the death-rate in London. It is a fuel which is claimed to be absolutely smokeless, at a price not exceeding that of ordinary coal, in the form of cubes, which freely and clearly give off a yellow flame, gradually turning blue. There is a good deal of curiosity as to the system of manufacture, but nothing is known, except that the materials used are coal, pitch and a certain mineral, which are all mixed together warm in a disintegrator, and then molded under the pressure of two tons to the square inch.

What is a Germ?

Prof. A. Arnold Clark, of Lansing, Mich., thus answers this question : " It is a matter of common experience to wake up some fine spring morning and find your lot full of thistles growing where none grew before. Why? Because the seeds of thistles have been carried in the air from your neighbor's thistles and found a favorable soil in your front lot. It is a matter of common observation that grape juice left to itself will turn to wine. Why? Because the seeds of fermentation—infinately smaller than the seeds of thistles—have found their way into this grape juice and grown a crop of fermentation. It is also a matter of common observation that wine left to itself will turn to vinegar. Why? Because another seed or germ whose business it is to make vinegar has fallen on this favorable soil and grown a crop of vinegar. When you can your fruit, you boil it. Why? To kill the germs of fermentation in the can. And then you shut it up tight. Why? To keep out the germs of fermentation floating in the air. It is also a matter of common observation that meat left to itself will decay. Why? Because the germs of putrefaction in the air have found in this meat a favorable soil for growing decay.

" It is also a matter of common observation that a boy perfectly well yesterday will wake up this morning sick with scarlet fever. Why? Because, just as there is one seed or germ which will turn grape juice into wine, and another kind which will make vinegar, and another kind which will turn sweet meat into carrion, there is another germ whose sole business on earth is to make well people sick with scarlet fever."

Fat Not Strength.

Children may be fat and yet be weak. There is an idea abroad that fat babies must be healthy and robust. It is a great mistake. What makes fat? The carbohydrates, which means simply so much starch and oil, substances that will fill out and make tissue plump, but do very little toward building up and fortifying the framework behind. Fat babies are usually dull, and for the reason that is included in what has been said. Your spry, lively, bright infant is not overloaded with fat as a rule; but on examination he will show a rather firm consistency, strong bone and muscle, and a head fairly organized. Milk, having its normal percentage of casein, meets the need of the growing infant fully.

Brass Polish.

Brass articles, which are fashionable just now, and require careful attention to keep clean and bright if not lacquered, are cleaned by rubbing sweet oil on with a bit of flannel, and finally polished with a chamois. If lacquered, wash with a soft brush in warm water and soap, wipe well and set before the fire until perfectly dry. Bronzes are cleaned with sweet oil rubbed on with a brush, then rubbed off with a second brush and polished with chamois. Another plan is to plunge them into boiling water until very hot, then wash with flannel and yellow soap, drying carefully with soft rags. If soap and water prove ineffectual, try bees-wax dissolved in turpentine, rubbed on and off with clean, soft rags.

Nutrition and Skin Diseases.

Unexpected as it may be to some of our readers, the statement is none the less true that a large proportion of cases of skin disease are due to some affection of the digestive or assimilative organs. Right these organs and we cure the skin affection; neglect them and we may go on specifically doctoring the skin disease till doomsday with only negative results. The late Sir Erasmus Wilson, England's greatest skin specialist, thus forcibly puts the idea we have enunciated: "Well, our first six patients are adults, say between 40 and 60 years of age; some have eczema, moist and dry, recent and chronic, some erythema, some gutta rosea, and some lichen (all skin diseases). We inquire into the functions of digestion and assimilation; in the majority we find symptoms of stomach disorder, nausea, loss of appetite, flatulence, distention, constipation—all more or less confirmed. Our pen flies to the paper; we are about to prescribe; and for what? for indigestion and malassimilation. But our patient consults us for cutaneous disease, not for his stomach or liver or digestive organs, with which he finds no fault, and which he is not aware of being in a state of disorder; while we, on the other hand, know the assimilative organs to be the cause of irritation, and if they be restored to their healthy function all the cutaneous symptoms will subside and disappear."

To Live Long.

Take an hour of exercise to every pound of food. We are not nourished by what we eat but what we digest. Every hour you steal from digestion will be reclaimed by indigestion. Beware of the wrath of a patient stomach. He who controls his appetite in regard to the quality of his food may safely indulge it in regard to quantity. The oftener you eat the oftener you will repent it. Dyspepsia is a poor pedestrian; walk at the rate of four miles an hour and you will soon leave her behind. Abstinence from all stimulants is easier than temperance. An egg is worth a pound of meat. Sleep is sweeter after a fast day than after a feast-day. For every meal you lose you gain a better.

The Influence of Tobacco on Digestion.

(1) Tobacco increases the quantity of gastric juice, but diminishes its acidity.

(2) The quantity of free hydrochloric acid of the gastric juice is diminished under the influence of tobacco.

(3) Proportionately to the decrease of the amount of hydrochloric acid there is an equal diminution of the digestive power of the gastric juice.

(4) Tobacco likewise slows the action of the gastric ferments.

(5) These modifications in the gastric juice produced by tobacco last for a period of several days.

(6) As regards the motility of the stomach and its power of absorption, tobacco is stated to produce an increase of these functions.—*Therap. Gaz.*

Some Risks of Attention to Health.

We have always maintained that hygiene, rightly understood, does not imply "living by rule," that the very introspection which such a minutely regulated life would entail would defeat the very object after which we were seeking. Dr. Norman Kerr, of London, a very distinguished physician, fully bears us out in this idea when he says that he has had patients who have killed themselves by attempting too earnestly to live on scientific principles. Such worried themselves and sometimes their wives into an untimely grave, by the absorption of their whole being in the worship of Hygeia. Infinitely better for themselves and for their offspring if they had "thrown health to the dogs." Infinitely better it would have been for their offspring if these had been brought up regardless of hygiene, turned out on the Highland hills, and fed on oatmeal porridge or peasebrose, or anything that came along. Only the fittest would have survived, but the survivors would have been more numerous and a trifle happier. Tables of digestion were all very well in their way, but regard must be paid to the idiosyncrasies of the individual stomach. One man's meat was another's poison. In a word, food must be prepared "with brain sauce." The science of dietetics must be applied with common sense. So must attempts at sanitary excellence.

Use Water Freely.

From our personal observation, we are satisfied that people do not drink water enough ; provided, of course, that they can get good, pure water. We do not believe it possible for any one to drink too much water ; it is, unquestionably, a healthy habit to drink most freely of good, pure water. It flushes the system, bathes every tissue, dissolves and removes the products of tissue metamorphosis, keeps the skin more active, stimulates the kidneys to the removal of waste matter, and unloads the emunctories generally, and so leaves the cells in the best condition for functional activity, unclogged by surrounding debris and able to perform their respiration freely and naturally. Thus it not only removes old, worn-out matter, but paves the way for the reconstruction of new material, and the whole system is, as it were, from day to day rejuvenated.

Salicylic Acid Shampoo.

E. Dieterich, *Pharm. Centralbl.*, gives the following formula :

Salicylic acid	380 grs.
Glycerin	760 "
Alcohol of 68 per cent.	30½ troy ozs.
Oil of wintergreen.....	5 drops.
Oil of rose.....	1 drop.
Oil of neroli	1 "

Mix and filter. Wash the head well with warm soapsuds, then with pure warm water, and dry it with a towel. Then pour two tablespoonfuls of the shampoo into a wine glass, fill with warm water, and apply the mixture thoroughly by means of a small sponge to the scalp and hair.

The Medicine of Humor.

"A merry heart," we are told on good authority, "doeth good like medicine;" yet there is a latent feeling about some of us that we are not living the religious life when we are thoroughly enjoying ourselves and appreciating a witticism. Having had occasionally a guilty sense of overfondness for the humorous, we were struck by the words of George MacDonald on this subject: "Who made laughter? Did God make it, or the devil? Did a man ever laugh heartily and honestly when engaged in the devil's work?" Why should we be inclined to consider, somehow, the joyous things of life as the devil's possession? Surely none should be able to smile and laugh in such genuine enjoyment as those who know they have a Father and a Friend, the Giver of sunshine and flowers and radiant coloring and everything gladsome and beautiful. No sincere disciple will give himself license as to worldly pursuits under the plea of wholesome fun and recreation, but there is no reason why the children of the King should go mourning all their days; and Cheever has well remarked that to unite genuine humor with deep piety, to use it with chastened judgment, yet spontaneously and richly, must be counted one of the manifestations of a powerful intellect.—*Churchman*.

Wesley's Preaching Sweat.

John Wesley plainly indicated that he was fully alive to the important part played by the many thousands of sweat-glands in the human body, as eliminators of effete and harmful material, when he spoke of the efficacy of his "preaching sweats." Archbishop Ryan, of Philadelphia, tells us that if he feels a little badly before beginning to preach, he is always benefited by the sweating which this effort produces. There is a sound physiological explanation of this fact. If our system is loaded with dead tissue we cannot feel well; if our sweat-glands are choked up, our system will be so loaded; when we open these sweat ducts, by some exertion, we get rid of this effete matter, and thus relieve the system of that which has oppressed it. But when we have thus opened these ducts we must be careful not to suddenly close them by exposure to draughts. Hence we see there is a physical as well as a moral efficacy in preaching.

Frequency of Thunder-Storms.

A German periodical gives statistics concerning the frequency of thunder-storms in various regions of the world. Java has thunder-storms on the average 97 days in the year; Sumatra, 86; Hindostan, 56; Borneo, 54; the Gold Coast, 52; Rio de Janeiro, 51; Italy, 38; West Indies, 36; South Guinea, 32; Buenos Ayres, Canada and Austria, 23; Baden, Wurtemberg and Hungary, 22; Silesia, Bavaria and Belgium, 21; Holland, 18; Saxony and Brandenburg, 17; France, Austria and South Russia, 16; Spain and Portugal, 15; Sweden and Finland, 8; England and the high Swiss mountains, 7; Norway, 4; Cairo, 3. In East Turkestan, as well as in the extreme north, there are almost no thunder-storms. The northern limits of the thunder-storms are Cape Ogle, northern part of North America, Iceland, Novaja, Semelja and the coast of the Siberian ice sea.

Defective Hearing in School Children.

Dr. Thos. Barr (*British Medical Journal*) says that teachers should keep in view that in every class of fifty children, there are probably at least a dozen who have some defect of the hearing, and are at a disadvantage with their normally hearing fellows. Children known to suffer from defective hearing should occupy a position on the bench nearest the teacher. If the defect be limited to one ear, the child should be so placed that the better ear is turned to the teacher. Children with extremely defective hearing, or totally deaf, should not be placed in ordinary classes, but taught in a separate class by one who is qualified to teach the German method of articulate speech and lip-reading. Children whose progress is unsatisfactory, who are unattentive, dull and idle, should have the capacity for hearing ascertained by proper tests. If defective hearing is found, the parents should be so informed and the children's position in the class so arranged as to minimize the bad effects of defective hearing.

Cats Cause Ringworm.

"The ringworm is doing well in this city at present," said a prominent physician recently, "and if this peculiar form of skin disease is not checked, and people are not very cautious, it will spread rapidly."

"What is the cause of this skin affection?"

"The cat is the principal promoter of it. Children love to carry kittens around with them. The former are often covered with certain fungi or parasites which, when brought in contact with a human being's skin, act similar to poison oak, although the eruptions are of a different character. I have ascertained that in every primitive case I have attended there is always a kitten or cat in the household, and this feline is petted and fondled not only by the children, but by the adults. Let me give a bit of advice to young ladies who hold their complexions at any value when I say don't handle the cat, whether he be the sweetest of kittens or the most valuable Maltese."

A Mother's Responsibility.

The child's doctor is daily impressed with the thought that there should be a special chair in every school for girls, for the purpose of accomplishing a mild degree of training in the direction of maternal duty. The innocent ignorance of mothers has much to do with occasioning disease in their children. Allusion is not made now to the neglect of hygiene, but to the failure on the part of the mother to recognize that she has in her child a bundle of nerves far more sensitive than her own. How often we see children that are fed and immediately afterward trotted and churned to the point of complete indigestion, and when discomfort results they are given more of the same treatment. An incident noticed to-day in the round of practice, reminds me that even among those seemingly intelligent we find errors of this kind committed. The mother of the little one to whom we were called, backed up by her grandmother, insisted that when the baby, after nursing heartily, evidently had wind upon its stomach, that shaking and trotting upon the knee would assist in its relief. When asked how she would like it if, after being overfilled with food, some one eight or ten times as large should take her and pound her up and down with a view of adding to her comfort, she realized the point that was made. She is not the only mother, and grandmother as well, who, though well informed in other directions, is ignorant of the fact that babies are but miniatures of ourselves; that their feeding should be systematic; the proper material given and the quantity not too much but just enough, and that immediately following the meal, a restful position is preferable to excitement and exercise.

A WEISBADEN physician cured a wealthy patient of a dangerous disease. He thereupon gave \$500,000 to found a hospital. He should have given a like sum to his doctor.

Fresh Air a Luxury.

A striking illustration of the great defect at present existing in all our large cities is the fact that one of the latest charities organized in New York has for its object to give entire poor families occasional opportunities to enjoy fresh air. Now, if there is any one object which the government of a community made up of people living in proximity should have first in view and most perfect in execution, it is precisely this. Of all the necessities of life none is so absolute as vital air. Nature furnishes it without stint. Ignorance and avaricious greed neutralize this liberality of nature. With the spread of modern scientific knowledge, ignorance will be dissipated, and great masses of laboring people dwelling in cities and towns will decree for themselves and their children fresh air, not as a luxury from the kind hand of charity, but as an inalienable right of American citizenship, and so declared by the *magna charta* of our national existence.

How to Live on Vegetable Diet.

In *Hygiene* for April there appeared a letter from Mr. R. S. Saunders, a member of the Vegetarian Society, advocating vegetarian diet, and giving the particulars of his experience for a week. Mr. Saunders writes as follows: "My diet has, for some time, been as follows: *Breakfast*—6 ounces bread, 2 ounces figs or dates, 2 ounces oatmeal, hominy or maize, as porridge, the fruit stewed and eaten with the bread, the liquor taken with the porridge, or 4 ounces figs or dates, dry, and 2 ounces nuts (pea or monkey nuts, baked, or Barcelonas) and 3 ounces bread. *Lunch*—Quarter pound bread or biscuits and an apple or orange. *Dinner or Supper*—2 ounces haricot beans or lentils, boiled, 8 ounces potatoes, carrots, etc. (or a soup composed of above), and a plain rice or other pudding, or macaroni, cheese or rice and cheese, and 4 ounces bread with jam. The weights stated of cereals and legumes are before cooking. The cost comes out thus per week: Bread, 5 pounds, at 3 cents, 15 cents; figs and dates, 2 pounds, at 4 cents, 8 cents; nuts, 1 pound, at 6 cents, 6 cents; fruit for lunch, 8 cents; haricots and lentils, four days, 8 ounces, 2 cents; pudding, four days, 8 cents; vegetables, 4 cents; macaroni or rice cheese, three days, 9 cents = 50 cents. I calculate that I consume about 32 ounces per diem, giving 4 ounces nitrogenous, 14 ounces carbohydrates, 2 ounces fat and 12 ounces water, exclusive of what I drink. Wholemeal bread is the only kind I use, and I find the 'Hygienic' the best, being made with finely-ground meal and a minimum of salt. It will be observed that I eschew tea, etc., my drink, when I need any, being water, generally hot, before going to bed. I work hard, have much walking, and weigh eighteen pounds more than before giving up meat."

A BOUNTY of 100 francs is offered to every married couple in France who shall add one more citizen to the State during 1892. It is hoped in this way to check the decrease in the French population.

Bananas as Food and Medicine.

Dr. John Dougall, of St. Mungo's College, Glasgow, has a letter in a recent issue of the Glasgow *Herald* on the banana. He quotes from Stanley's "In Darkest Africa," showing that "for infants, persons of delicate indigestion, dyspeptics, and those suffering from temporary derangements of the stomach, the flour, properly prepared, would be of universal demand." During Stanley's two attacks of gastritis a slight gruel of this flour, mixed with milk, was the only material that could be digested. It is odd, also, as pointed out in Stanley's book, that in most banana lands—Cuba, Brazil, West Indies—the valuable properties of the banana, as an easily digested and nourishing food, have been much overlooked. Dr. Dougall has made some experiments in making banana flour. He concludes that it should be made from the ripe fruit at its place of production. In trying to make it from bananas purchased in Glasgow, he obtained, on drying the pulp, a tough, sweet mass like toasted figs, an appearance probably due to the conversion of starch into sugar. Bananas contain only about fifty per cent. of pulp, and of this about seventy-five per cent. is water; they would yield, therefore, only one-eighth part of flour.

Rich Men's Ailings.

It is an old axiom that health is the greatest of all riches, and it is a thing that money will often not buy. Indeed, the possession of great wealth is a predisposing cause of a number of complaints. This, says a Paris letter to the *New York Tribune*, is the opinion of Dr. Monin, who has defended it in a book just published, entitled "Rich Men's Evils." The list of diseases which escort the rich man is not a long one, but it is, if one may call it so, a substantial one.

The possessor of several hundred thousand dollars has the choice between stomach complaints of various sorts, congestions, apoplexies, rheumatisms acute and subacute, gout, headaches of every degree, affections of the heart, pleurisy and asthma, liver complaints, jaundice, roseole (from which Queen Victoria suffers), sleeplessness, nervous exhaustion, besides a number of artificial distempers which are within the reach of all who can purchase morphine, cocaine or ether.

Whatever your choice may be, you may console yourself by the thought that you suffer in good company. Rheumatic people will remember that Mme. de Sevigne, who was a sufferer from it, wore a cheerful countenance and delighted her friends with her sparkling wit. The gouty celebrities form a brilliant host: Horace, Leibnitz, Erasmus, Kant, Franklin, Milton (I give the names as they occur, not in chronological order), Darwin, Sydenham.

As you see, doctors are not exempt from it. Literary people are placed by Dr. Monin in company with millionaires, an association no doubt flattering to both, but none the less unlooked for. The weight of their purses, however, has nothing to do with this; but, like plutocrats, they lead a sedentary life, dissipate a quantity of vital energy, and are obliged, on that account, to have a substantial diet. Literary men and women are therefore subject to dyspepsia and gout.

The Warm Bath for Colic.

A communication in the *Medical Record* advises the warm bath for infants suffering from intestinal colic.

The writer says that he was led to try this remedy in a case of colic, accompanied by extreme restlessness and pain and considerable diarrhoea, because of the failure of all usual treatment. The trouble had continued several weeks, and the child had become much emaciated. Morphia had been tried without success.

At length, fearing that the child might go into convulsions, the doctor ordered a tub half full of water, at a temperature of 90° Fahrenheit. While the child was immersed in this, its head was kept cool with cloths wrung out of cold water. The doctor says :

“The effect was magical. Within ten or fifteen minutes the child quieted down, and on being taken from the bath fell into a quiet, healthful sleep, which lasted several hours. The little patient from that time began to get well. The mother and nurse, having learned the value of the tepid bath, resorted to it afterward whenever the child was threatened with one of its colic spells. Within a week or two it had entirely recovered.”

The Science of Meats.

Dr. R. S. Huidekoper, who knows whereof he speaks, tells us that a piece of fat meat contains 50 per cent. more nutritive substance than lean. Much nutritive substance is quickly lost in an animal that exercises violently or is suffering from inflammatory trouble before being slaughtered. The ox is the best animal for food purposes, because he forms a great amount of good meat. Good meat animals will dress from 50 to 58 per cent. of live weight. The same class of animal will contain 50 per cent. of water in its tissues. Of the different methods of slaughter the pole-ax and rifle are the best, although the process of bleeding is best attained by the Jewish method of cutting the throat, which seems cruel, but probably is not. The meat is darker in the male than in the female animal. The meat is softer on the first than on the second day after slaughter, although if cooked at once the meat is tougher and harder. In cool weather meat is firmer than in warm.

There are three qualities of meat. The first quality of beef should be bright in color, matted with fat, firm and elastic to the touch, with a good grain and a fair amount of juice. Mutton should be bright in color, and veal should be from white to a pale rose. There are four categories of beef, the best being along the spine and the rump. What tenderloin gains in tenderness it loses in savor. The rump has the best savor. The fattening of an animal before killing improves the first category of meat, but does not affect the other qualities. Animals affected with pleuro-pneumonia are not unfit for food especially, only when fever forms what is known as “bloody meat.” The Jewish butcher, however, will not sell the meat of cattle so affected, but turns it over to the less particular Christian butcher.

Hereditary Terror in Geese.

A correspondent of the *Revue Scientifique* vouches for the following story: For about twenty years he was in the habit of visiting, two or three times each year, a farm where was kept a flock of geese, numbering from thirty to thirty-five in the early part of the winter, and in the spring four or five, left for breeding purposes; these also generally being killed a few months later, after the new broods had attained their growth. In the month of July, 1862, on a feast day, the farmer and his men being absent, the geese were forgotten, and were attacked by dogs, which killed the most of them. The next evening at twilight the farmer thought they must have been attacked a second time. He found them flying about in their pen much frightened, but the dogs were nowhere to be seen. The next day this terror reappeared at the same hour, as it did on the following day, and from that time on. The correspondent of the *Revue* had forgotten this fact, when, ten years later, he chanced to be on the farm one evening and heard the cackling of the apparently frightened geese. When he asked for an explanation he was told that this had been kept up from the time they had been attacked by the dogs, that there had been no repetition of the attack, and that the flock had been renewed in the meantime at least three times. If this story is well authenticated, we have a case of the transmission of terror to the third generation in a family of geese.

A Lesson in Longevity.

The *Medical Age* draws a lesson in longevity from the life of the late George Bancroft, in which, while it admits that there is no system of living which will insure longevity, yet, withal, there are certain considerations tending that way, and which, if carefully lived up to, offers probably the best chance of reaching close to, if not quite, the hundred-year period. The following pertinent advice is given:

Live as much as possible out of doors, never letting a day pass without spending at least three or four hours in the open air.

Keep all the powers of mind and body occupied in congenial work. The muscles should be developed and the mind kept active.

Avoid excesses of all kinds, whether of food, drink or whatever nature they may be. Be moderate in all things.

Never despair. Be cheerful at all times. Never give way to anger. Never let the trials of one day pass over to the next.

The period from fifty to seventy-five years should not be passed in idleness or abandonment of all work. Here is where a great many men fail—they resign all care or interest in worldly affairs, and rest of body and mind begins. They throw up their business and retire to private life, which in too many cases proves to be a suicidal policy.

During the next period, the period from seventy-five years to one hundred years, while the powers of life are at their lowest ebb, one cannot be too careful about "catching cold." Bronchitis is a most prolific cause of death in the aged. During this last period rest should be in abundance.

A Domestic Sterilizer.

There are few houses in which a ready sterilizer is not at hand, namely the kitchen oven. The heat which can be generated in this culinary appliance would be more than sufficient to destroy those forms of germ life which are inimical to wound treatment. With a clean receptacle at hand, into which towels and other appliances required for the purposes of an operation could be placed, the kitchen oven could be relied on to effect the necessary sterilization of these with convenience and dispatch. Thus as an improvised "sterilizer" we can easily conceive of the occasions when a surgeon would be glad of the assistance of the kitchen oven.—*Medical Press and Circular*.

Fruit and Bread the Most Wholesome and Natural Food of Man.

The food which is most enjoyed is the food we call bread and fruit. In my long medical career, extending over forty years, I have rarely known an instance in which a child has not preferred fruit to animal food (says a medical writer in *Longman's Magazine*). I have been many times called upon to treat children for stomachic disorders, induced by pressing upon them animal to the exclusion of fruit diet, and have seen the best results occur from the practice of reverting to the use of fruit in the dietary. I say it without the least prejudice, as a lesson learned from simple experience, that the most natural diet for the young, after the natural milk diet, is fruit and wholemeal bread, with milk and water for drink.

The desire for this same mode of sustenance is often continued into after-years, as if the resort to flesh were a forced and artificial feeding, which required long and persistent habit to establish a permanency as a part of the system of everyday life. How strongly this preference taste for fruit over animal food prevails is shown by the simple fact of the retention of those foods in the mouth. Fruit is retained to be tasted and relished. Animal food, to use a common phrase, is "bolted." There is a natural desire to retain the delicious fruit for full mastication; there is no such desire, except in the trained gourmand, for the retention of animal substance. One further fact which I have observed—and that too often to discard it, as a fact of great moment—is that when a person of mature years has, for a time, given up voluntarily the use of animal food in favor of vegetable, the sense of repugnance to animal food is soon so markedly developed that a return to it is overcome with the utmost difficulty.

Neither is this a mere fancy or fad peculiar to sensitive men or oversentimental women. I have been surprised to see it manifested in men who are the very reverse of sentimental, and who were, in fact, quite ashamed to admit themselves guilty of any such weakness. I have heard those who have gone over from a mixed diet of animal and vegetable food to a pure vegetable diet, speak of feeling low under the new system, and declare that they must needs give it up in consequence, but I have found even these (without exception) declare that they infinitely preferred the simpler, purer and, as it seemed to them, more natural, food plucked from the prime source of food, untainted by its passage through another animal body.

A Food for Infants.

In the summer diarrhoeal troubles of infants, where milk in any form disagrees and vomiting is easily provoked, Jacobi says that a mixture which is about as follows has rendered him valuable service: Five ounces of barley-water, the white of one egg, from one to two teaspoonfuls of brandy or whisky, some salt and sugar; a teaspoonful every five, ten or fifteen minutes, according to circumstances. Mutton broth may be added to the above mixture, or may be given by itself, with the white of an egg and some salt.

A Paste That Will Adhere to Anything.

Prof. Alex. Winchell is credited with the invention of a cement that will stick to anything (*Nat. Drug.*). Take two ounces of clear gum arabic, one and a half ounces of fine starch, and a half ounce of white sugar. Pulverize the gum arabic, and dissolve it in as much water as the laundress would use for the quantity of starch indicated. Dissolve the starch and sugar in the gum solution. Then cook the mixture in a vessel suspended in boiling water until the starch becomes clear. The cement should be as thick as tar, and kept so. It can be kept from spoiling by dropping in a lump of gum camphor, or a little oil of cloves or sassafras. This cement is very strong indeed, and will stick perfectly to glazed surfaces, and is good to repair broken rocks, minerals or fossils. The addition of a small amount of sulphate of aluminium will increase the effectiveness of the paste, besides helping to prevent decomposition.

Nine Rules for Bathers.

Avoid bathing within two hours after a meal.

Avoid bathing when exhausted by fatigue or from any other cause.

Avoid bathing when the body is cooling after perspiration.

Avoid bathing altogether in the open air if after having been a short time in the water it causes a sense of chilliness and numbness of the hands and feet.

Bathe when the body is warm, provided no time is lost in getting into the water.

Avoid chilling the body by sitting or standing undressed on the banks or in boats after having been in the water.

Avoid remaining too long in the water; leave the water immediately if there is the slightest feeling of chilliness.

The vigorous and strong may bathe early in the morning on an empty stomach. The young and those who are weak had better bathe two or three hours after a meal—the best time for such is from two to three hours after breakfast.

Those who are subject to attacks of giddiness or faintness, and those who suffer from palpitation and other sense of discomfort at the heart, should not bathe.

The Lost Arts.

We learn from the *Egyptian Gazette* of May 8, 1891, that Dr. Grant Bey, a distinguished American physician and archæologist residing at Cairo, has been prosecuting an interesting research for the Smithsonian Institute at Washington, which has resulted in his discovering that the ancient Egyptians of the earliest dynasties used a smokeless light, equal in intensity to our electric light, for lighting their temples and for enabling them to execute the fine work in the interior of their dark tombs. The Society of Science, Letters and Art of London has awarded Dr. Grant Bey a medal for his scientific work, bearing a very pretty design on one side and, on the reverse, his name with the date 1890.

Furniture Polishes.

A RED POLISH.

Oil of turpentine	16 ozs.
Alkanet	4 drachms.
Bees-wax	4 ozs.

Digest the alkanet in the oil until sufficiently colored; then scrape the bees-wax fine and form a homogeneous mixture by digestion over a water-bath. For a pale polish, omit the alkanet.

A WHITE POLISH.

White wax	1 lb.
Solution of potash	32 ozs.
Boil to proper consistency.	

POLISH FOR FINE CARVED WOOD.

Take 8 ozs. of linseed oil, 8 ozs. of old ale, the white of an egg, 1 oz. of spirit, 1 oz. of spirits of salts. To be well shaken before using. A little is to be applied to the face of a soft linen pad and lightly rubbed for a minute or two over the article to be restored, which must afterward be polished off with an old silk handkerchief. This will keep any length of time if well corked.

FOR DELICATE CABINET AND PAPIER MACHE WORK.

Linseed oil	16 ozs.
Spirit	8 "
Vinegar	8 "
Butter of antimony	2 "
Oil of turpentine	8 "
Shake well before using and apply with a wooden rubber.	
Oil of turpentine	16 "
Rectified oil of amber	16 "
Olive oil	16 "
Oil of lavender	1 "
Tincture of alkanet	4 drachms.
Mix.	

A cotton rubber is saturated with this polish, which is thus applied to the wood. The latter is then well rubbed with soft, dry cotton rags and wiped dry.
—*Meyer Bros., Drug.*

Antiseptic Shaving.

The London *Lancet* says: Notwithstanding that the subject has recently given rise to some discussion in the daily press, there can be no reasonable doubt as to the causation of parasitic sycosis and the frequent responsibility of barbers for its propagation. The truest wisdom is clearly to use due care in selecting a barber. Whatever he is not, he must be clean and careful. It should not be forgotten that there are possible safeguards well within the reach of this class of tradesmen which a customer may fairly exact for his own security as part of the common law of shaving. These include the use of perfectly fresh water and soap, or preferably shaving cream as admitting of exclusive use, a clean brush and a clean razor for each person shaved.

We should also advise, as a further but not superfluous precaution, that instruments after washing be dipped in some convenient antiseptic solution. Such measures as these require but little time to carry them out. They are needful in order to insure immunity from contagion, and the poorest will find them worth a small addition to the barber's fee.

The Island of St. Kilda.

A cablegram from London, July 21, 1891, to the daily papers, calls attention to a mysterious malady which is affecting newborn infants on the little island. It says:

"The symptoms of the disease appear about the eighth day from birth. The hands close and remain rigid; a kind of lockjaw follows; the muscles of the face contract; the mouth is closed, and in a few hours more death ensues. From the appearance of the first symptoms until dissolution, twenty-four hours elapse. One family have lost twelve children in this way, and all the families on the island have lost from two to eight children by the singular disease. The first-born of each family generally lives. The doctors are inclined to attribute the malady partly to the habit among the islanders of intermarrying among blood relatives, and partly to the fact that the diet of the people is limited almost entirely to oily food, such as birds and fish. There are only about 100 people on the island, and they are so closely related as to really form hardly more than one large family."

This condition of affairs has long been known on St. Kilda. The influence of the intermarrying, however, is negated by the fact that children of the natives of St. Kilda born elsewhere than on the island do not become affected with trismus neonatorum.

According to Holland, trismus neonatorum prevails so extensively on the island of Heimaey, one of the Icelandic group, that the population is maintained almost entirely by immigration.

On this island, as at St. Kilda, the diet is almost exclusively one of fish and sea birds, and the custom prevails of feeding the infants this strong and oily food soon after birth. When, in addition to this fact, the remarkable uncleanliness of the natives is recalled, we may certainly be justified in supposing the cause of the tetanus to be in a poison contained in the food.

Truth in Jest.

It was urged with considerable force on one occasion by the chairman of the famous Lime Kiln Club (says Dr. H. S. Drayton), that "while mince pies, beefsteak, strawberry short-cake and ham sandwiches helped to enrich the blood and to start a vein for the fat to cling to, it was beans that braced and strengthened and made a man feel as if he could whip a ton of wild cats; and beans," he went on, "were always to be had in any respectable grocery; they were easy to carry home, and they did not need oyster stuffing nor cranberry sauce for finish." The cranberry sauce, however, would be a very proper adjunct to the beans. We would suggest, as a proper bill of fare for breakfast during warm weather, the following—say there are half a dozen persons or more at table, and variety on that account being necessary to meet the differential spirit likely to prevail in the way of taste and appetite:

Cracked wheat and boiled potatoes.

Eggs, boiled or poached.

Oatmeal gems, brown bread or white bread.

Canned grapes, apple sauce or fresh fruit.

"Crust" coffee, milk.

Nature's Food.*

Nature's food for the infant is the milk of the mother. That it is the best food for the infant is accepted by all. But this means that it is the best food for the healthy infant. Nature has not provided a food for the sick child, particularly not for the child suffering from bowel disorders. Statistics abundantly prove that a large majority of the infants dying from the bowel disorders of summer are to be found among those who have been deprived, more or less completely, of their natural nourishment. From this undisputed fact it has been too often inferred that the proper food for the child affected with summer complaint is mother's milk, or, in its absence, that substitute which may be supposed most closely to resemble it. This is clearly a *non sequitur*. The conclusion should have been that the natural method of feeding the infant is a most excellent prophylactic against bowel-trouble.

But to go further and to assume that a prophylactic measure will be a curative measure is clearly unwarranted. Vaccination will not cure variola.

The various efforts which have been made, and are being made, to imitate mother's milk, in its physical, chemical and biological aspect, are worthy of the highest respect; but even should they reach an ideal conclusion, it will be to supply a food for the healthy baby, and not for the sick one. When sterilized milk was offered to the profession, its advent was hailed by many as an important step forward in the feeding of sick babies, but its shortcomings are now becoming apparent and are attracting the attention of medical writers.

The various abnormal fermentations which occur in the intestinal tract of the infant suffering with bowel-trouble, and which can be maintained by a milk preparation of one kind, can be maintained by a milk preparation of another

* From the *Journal of the American Medical Association*.

kind. A micro-organism which can grow in one milk food can grow in any other milk food. To sterilize milk and then introduce it into a nest of bacteria is a trifle illogical. And this illogical procedure has had its origin in the effort to imitate Nature's food.

If, now, instead of stating with an hypothesis, the ground has been cleared of fetiches, and attention directed to the real problem, no doubt a much more tenable position would now be held on the subject of the proper food for a diarrhoeal baby. The starting point for observation is a simple one: Abandon all hypotheses, study the conditions present in the child, and adapt the food to those conditions, on principles which shall be comprehensive.

Prevention Rather Than Cure.

It has been customary for Western nations to look with disdain upon anything originating in China, but they have, nevertheless, found that even the Chinese can give them valuable instruction. And in the matter of preventing disease there seems to be a good opportunity to copy with advantage from the Orientals. They pay their physicians by the week, month or year for keeping them in good health. When ill the pay stops, though the physician has greatly increased work. His pay only begins again when he has restored his patient to health. This method of preventing disease is based on sound sense, and, if followed in this and other nations, would undoubtedly be productive of much good.

The development of medical science with us has been in the direction of curing rather than preventing disease. But not very much has been accomplished. People suffer from the same diseases now as in former times. The pains and plagues that were studied and classified centuries ago are the same that trouble us now. Some of them have been given new names, and some general and rather unmeaning terms, such as "malaria," "hay fever," etc., have come into common use, but with all their researches physicians are little better able to cure now than in olden times. There have been great achievements in surgery, but the people die of the same diseases now that carried their forefathers to the grave. It is even asserted that the average of human life is less than it was 100 years ago, although this is probably not true.

What has been done in the way of alleviating human suffering has been largely in the direction of preventing rather than curing disease; and it is gratifying to observe a tendency in the medical profession to devote themselves in a larger degree to this branch of their work.

The above reflections emanated from an authority in the *Medical World*, and it shows the tendency of the scientist in medicine to open the way for the prevention of disease rather than the cure of the same. We can't help but think how much more good to humanity to prevent its ills than to cure them. Certainly it would be a saving of money and a saving of suffering and a saving of life if only more were done to prevent disease. It is a noble work and a great charity to help the distressed and give to hospitals to cure affliction, but there is a nobler work and a grander charity, and that is for all to labor for the prevention of affliction.

Present Aspects of Disinfection.*

Mr. Wynter Blyth has lately addressed the Society of Medical Officers of Health of England, regarding the latest improvements in disinfection. He finds that the basis of the scientific use of disinfectants is changing year by year as our knowledge of disease causation advances. At the beginning of the last decade, when the first results began to be revealed as to the relation of micro-organisms to disease, it was the general inference that pathogenic microbes, or those concerned in the propagation of diseases of an infectious character, were almost wholly those of the sporogenic type, and that since the spores of all such organisms are possessed of a high degree of inherent vitality, no so-called process of disinfection could be considered adequate and thoroughly efficient which did not have the power of destroying the vitality of the spores of the bacillus anthracis, the most resistant of them all. More recently, however, the field of vision has been clarified, and it is no longer necessary to assume that there is the same degree of vitality in all specific disease-germs as exists in that of anthrax. By degrees the pathogenic microbes of very many of the specific infectious diseases have been identified and shown to be non-sporiferous, as in the case of the well-known forms of cholera, uterine fever, erysipelas, septicæmia and epidemic diarrhœa; have been shown to occur as bacilli, streptococci or micrococci and to be very feebly resistant to heat and chemical agents. In this new view, therefore, it has become unnecessary to have recourse to those powerful chemical substances, the use of which was attended by obvious practical difficulties. In a paper before the Royal Society, Mr. Blyth has already pointed out the important relations of temperature, space and time as factors in the contest with the germs of disease, showing that, under appropriate conditions, even such simple means as lime-washing and æration were competent to remove infection. Behring and Pfuhl have recently published an account of their experiments with lime, showing its efficacy. Boer has observed that while the addition of very small quantities of lime to culture fluids favored the development of bacteria, larger quantities—as well as equivalents of potash or soda, producing an alkaline reaction, equal to what is known as 50° of normal acidity—were speedily destructive to all pathogenic microbes, in any other form than that of the spore. Hence we learn that the old-fashioned soft soaps, strongly charged with alkali, are in many cases far better germicides than the much-vaunted soaps of carbolic acid, thymol and terebene; and that the stripping of the wall-paper, lime washing the walls and ceiling, and the scrubbing of the wood-work with soft soap may be relied upon as generally sufficient for the disinfection of rooms or wards that require cleansing. Lime also becomes useful from its absorbent property, taking up, as it does, the sulphur compounds and other offensive gases, without itself becoming offensive; it is especially suitable in regard to the handling of disinterred bodies and for the purification of the contents of street gutters, and in nearly all cases where it will not cause the evolution of ammonia. Dr. Tykes, of London, has reported his experience of the immense value of quicklime in the removal of

* From the *Jour. Am. Med. Assoc.*

over two thousand bodies, and many thousand tons of very offensive soil, from a cemetery in the parish of St. Pancras to an extramural burial-place ; as fast as the ground was opened, quicklime was thrown in, and the stench at once ceased ; the coffins were placed in larger wooden cases, with plenty of lime, and, at first, lime was spread over the surface of the loads of offensive earth, after the carts were loaded ; but some complaints having been made by citizens along the line of streets through which the carts were driven, he substituted a top-layer of clean earth, when no more complaints were sent in ; this cemetery had been closed for twenty years, and the condition of putrefaction in the bodies was so variously and markedly offensive that without the lime the removal would have been well-nigh impracticable. For the disinfection of mortuaries lime may be used, but some health officers give a preference to a fifty per cent. dilution of the Burnett fluid, which is a solution of zinc chloride, containing four per cent. of the chemical. In the disinfection of sick-rooms, sulphur fumigations have had a variable reputation, and while they should not be allowed to supersede lime washing and the alkaline scrubblings, they should still be regarded as a serviceable addition to those measures. For the deodorization of excreta and stable refuse, the acid sulphates, which would fix the ammonia, and at the same time not detract from the value of the fertilizer, have the preference over carbolic powders, but there are many sanitary officers who adhere to the use of solutions of corrosive sublimate, especially for the disinfecting of enteric excreta. Touching the disinfection of fomites by heat, Dr. Blyth insisted that all recent researches tended to show that time was a most important factor. Given an indefinite period of time, comparatively low temperatures have been found effective, and intermittent heatings below 212° F. may very well be employed in the purification of those articles, such as kid gloves, which are damaged by higher temperatures. In the refuges established last winter in Berlin, the use of a steam-chamber was relied upon for the disinfection of the clothing of the lodgers, while the persons of the latter were being treated to a bath ; and recent German researches appear to establish the superiority of current steam over pressure steam, the steam being admitted at the upper part of the chamber and its temperature observed at its point of exit below. In regard to the carriage of infection by persons who are convalescent from infectious diseases, the discovery of Oertel must not be forgotten. He reports that he has found the bacillus of diphtheria in the throats of patients even as late as three weeks after recovery and discharge from attendance. It is possible that a like condition may obtain after scarlet fever, and may explain the propagation of the disease by discharged patients, notwithstanding the careful exercise of every ordinary precaution of disinfection of clothing and persons at the time of their discharge.

DR. VON BULOW is a very severe critic, apt to say bitter things occasionally. He was listening, not long ago, to a well-known New York tenor, when he made the remark to his neighbor : " I do not care for him. In fact, I do not think a tenor is a man ; he is an illness."

CORRESPONDENCE.

A Few Facts about Atlantic City.

Editor ANNALS OF HYGIENE:

The millionaire, the mechanic, the invalid, the athlete, the old maid of 80, *cappy and hairless*; the young girl of 18, *happy and careless*; the cultured gentleman, the natural *tough*, the staid and solemn-garbed Friend of Pennsylvania, the hog-enriched Chicagoan, the gold-bedecked Californian, the "pine-knot man" from Maine, the honest, brunt, outspoken Texan, the European aristocrat, the Ecquadorian, the Chilian, the Chinaman, the Japanese, the itinerant vender of "hoky-poky," the distinguished physician, the eminent lawyer, the learned man of science, the great actor, the fashionable dame with her beauty in her purchased adornments, and the natural beauty, whose limited means make her *unadorned* beauty the greater.

The representatives of every nation on the face of the globe, of every profession and calling of man and womankind, of every station in society, from the highest to the lowest; everyone happy and contented, or seemingly so; everyone bent on seeking pleasure for themselves, yet in nowise interfering with the pleasure of others. Liquor everywhere, yet scarcely a drunken man to be seen; fights and foul language so rare as to delight the clerical heart. Concert-saloons, one after another, where the only price asked in return for the entertainment offered is that you shall order some liquid refreshment; these saloons patronized, not by drunken, boisterous young men, but by good, honest laboring men, with their wives; concert-saloons wherein loud talk is the exception, and that are deserted after 10 o'clock in the evening. A board-walk so crowded with persons from every portion of the world as to remind one of Chestnut Street during the Centennial of 1876. An electric railway that is perfect in its operation; an opera house, where a first-class company is nightly rendering the popular operas of the day; fish, crabs, eels, all the inhabitants of all the ocean at one's service, and health and pleasure to be had in their capture.

Magnificent hotels, with ball-rooms for the young, and card-rooms for the spectacled parents, and wine-rooms and billiard-rooms for those who want them; and porches, with dark, secluded, cozy nooks, that even the full moon cannot fully penetrate, for those *who want them*. A half-score of merry-go-rounds; an observation wheel that lifts one fifty feet into the air as he sits quietly in a chariot. Booths and bazars that transport one, at this moment, to the narrow streets of Constantinople, thence on to the sacred precincts of Palestine, and in a moment to the wonders and curiosities of Japan.

Streets so quiet and eminently respectable that one might well imagine himself in London on a Sunday; but a few steps, and avenues so bright and light and lively that one is forcibly reminded of Paris on a fête day.

Provision stores not to be excelled in the variety and quality of their contents in any city of the land. Amusements for the rich; amusements for the

poor; amusements for the great middle class; entertainment for all, at prices suited to their means, and all eagerly availing themselves thereof; HEALTH FOR ALL, AND NO CHARGE THEREFOR.

Are we writing of heaven; are we penning a modern "Paradise Lost" to those of our fellow-mortals who are penned up in your hot and dusty and disease-producing cities, *eating tuberculous meat*? No; we are only telling a *few* facts about a town or city (for such it is) which the enterprise of the Reading Railroad has made a suburb of Philadelphia. We are telling a little about Atlantic City; only a little, because it is impossible to tell much; the *much* must be seen. One can form no conception of what this place is without a visit; it is unique; its like does not exist elsewhere in the world.

A SUBSCRIBER.

Doctors' Bills.*

SEE the fearful doctors' bills, brazen bills!
Telling by their magnitude of our fleshy ills.
What a world of misery their darkened figures tell,
Keeping all the sweets in life under baneful spell!

Coming every quarter,
A bank account to slaughter;
Growing steeper, steeper, steeper!
With a desperate desire
To make a clean sweeper
And wreck one in the mire.

Oh! the bills, bills, bills,
Telling of humanity's ills,
Of the wretching and the groaning,
Of the belching and the moaning
In the melancholy midnight hour,
Telling of terrific pains,
Telling of the doctor's gains;
Of his plodding,
Churchyard sodding!
He is neither man nor woman,
He is neither brute nor human;
He's a Ghoul!
And his king who holds
The bills, bills, bills,
While he swills
His victim's life's blood through his gills,
Keeping time, time, time,
To a sort of doctor's rhyme
To the pæan of the bills,
Of the bills.
Keeping time, time, time,
In a sort of doctor's rhyme,

*Inscribed to THE ANNALS OF HYGIENE, by Jackson Piper, M.D., President of the State Board of Health of Maryland.

While he takes his fill
 Of his victims in a pill,
 Pill, pill, pill,
 Calculating a bill.
 Keeping time, time, time,
 In a happy doctor's rhyme,
 To the throbbing of the bills,
 Bills, bills, bills;
 To the moaning and the groaning
 At the bills!

An Unappreciative Physician.

Under the title, "Good Books and Periodicals *versus* Ignorance and Laziness—a Rich Letter," the *Texas Health Journal* says: The indifference of some at the current medical and sanitary literature of the age is passingly strange. It is a problem hard to solve. These reflections result from a recent incident incomprehensible in its immensity. A subscriber returned this *Journal* with the following soul-stirring revelation: "Stop the Medical Health—am over red now—all I knead is treatment—got to big a library any how—besides I already take the theripudic gazet—dident subscribe for your *Journal* know how,—, M.D." We are confident this man is over "red"—but just how "red" we have no means of ascertaining—and that he thoroughly "kneads" his treatment—blue mass especially. Being already overstocked with the "theripudic gazet" and "to big a library" he "dident" "knead" the *Journal* "know how"—therefore we feel indisposed to press our claims, lest the gentleman become overwhelmed with pure "medical health." Regretfully we leave him to the peaceful enjoyment of his erudition and peculiar vernacular. So long as such men are intrusted with human lives the cause of a high mortality in some localities may, with some degree of certainty, be surmised.

State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania.

PRESIDENT,

J. H. McCLELLAND, M.D., of Pittsburg.

SECRETARY,

BENJAMIN LEE, M.D., of Philadelphia.

PEMBERTON DUDLEY, M.D., of Philadelphia.

J. F. EDWARDS, M.D., of Philadelphia.

GEORGE G. GROFF, M.D., of Lewisburg.

J. H. McCLELLAND, M.D., of Pittsburg.

S. T. DAVIS, M.D., of Lancaster.

HOWARD MURPHY, C.E., of Philadelphia.

BENJAMIN LEE, M.D., of Philadelphia.

PLACE OF MEETING,

Supreme Court Room, State Capitol, Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Thursday in May, July and November.

THE ANNALS OF HYGIENE



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NUMBER 9.

COMMUNICATIONS.

Precautions Against Sunstroke.*

BY GEORGE G. GROFF, M.D.,
Of Lewisburg, Pa., Ex-President of the State Board of Health of Pennsylvania.

CAUSES.

THIS dangerous illness is caused by excessive heat of the blood (from 100° to 110° Fahr.), which produces great depression of the nervous system. It occurs during the hot season of the year, and usually to those exposed to the hot sun, but it sometimes occurs at night, and also to those exposed to great heat, in glassworks, laundries, furnaces, bakeries, iron foundries, and the engine rooms of steamships. It is largely confined to the hot, close streets and passages of the cities, but is not unknown in the country. Those habituated to the use of alcohol, and the debilitated, are especially predisposed to attacks.

PRECAUTIONS.

Dark, close-fitting clothing and such as compresses the chest and neck should be avoided during the heated term. For those obliged to labor in the sun, light clothing and a straw or light felt hat, permitting free circulation of air, are preferable.

On very hot days, one should drink frequently, but in small quantities. A large amount of ice water, cold beer, soda water, mineral water or other iced drink entering the stomach at one time is injurious.

Cool water, into which oatmeal has been stirred, is a safe and refreshing drink. Water should not be drunk in considerable quantities at a lower temperature than spring water, namely, 56° Fahrenheit. Immediate death is often caused by "ice-cold" drinks. The immoderate use of alcoholic beverages is also dangerous.

The sleeping-room should be freely ventilated and cool. Constipation of the bowels should be avoided. When overheated, work slowly, frequently cooling the head, chest and back with cold water. Keep a wet cloth or some green leaves in the hat on the head, frequently wetting them with cold water.

* Suggestions issued by the State Board of Health of Pennsylvania.

When, on a very hot day, the skin becomes dry and uncomfortably hot, a burning sensation is felt in the head, and the face is flushed and the eyes blood-shot, with frequent tendency to urinate, the person should immediately quit work, retire to a cool place and rest in quietness; and if not speedily relieved from sensation of heat, take a cold bath.

SYMPTOMS.

The attack may be very sudden and take the form of delirium, in which the patient rushes wildly about and may attack those around him; or he may become weak and sink to the ground as if in a fainting spell or stupor. Loss of consciousness and mental disturbance may be only partial. Nausea or sickness at the stomach often precedes the onset. Convulsions may occur.

Sunstroke must be carefully distinguished from heat exhaustion, in which the general symptoms are similar to those of sunstroke, but the bodily temperature is below the normal. The difference can be at once recognized by feeling the skin underneath the clothing; in sunstroke the skin feels burning hot; in heat exhaustion it is cold.

TREATMENT.

(1) Carry the patient into a cool and shaded place, where there is plenty of pure, fresh air.

(2) Strip his clothing to the waist, and place him in a recumbent position.

(3) Pour cold water (ice water is best) upon his head and chest until consciousness returns. The points at which the blood may be most effectually cooled are the wrists, the temples and the ears, because at those points it approaches the surface more nearly in considerable quantities. Ice may be applied to the head and chest and rubbed over the body, but if the skin is cold no ice should be applied. Internally, small doses of brandy may be administered with success; but in all cases of sunstroke the patient should, as soon as possible, be placed in charge of a competent physician.

The patient should do no mental work for some months, and should keep free from all excitement. Persons who have once suffered from sunstroke are liable to a second attack. Insanity, in some of its varied forms, frequently follows sunstroke.

In heat exhaustion give alcoholic stimulants and place the patient in a hot bath, so as to raise the bodily temperature.

Hygiene and Physical Education.*

BY EDWARD HITCHCOCK, M.A., M.D.,

Professor of Hygiene and Physical Education at Amherst College.

THE department has outlived its experimental stage. It has survived many dark and doubtful days. But lately, and for the past six years especially,

* Abstract of Thirtieth Annual Report of Professor of Hygiene and Physical Culture, June 23, 1891.

the fact has seemed increasingly evident that physical education has come here, and in pedagogy everywhere, to claim a rightful place, and to stay. As Amherst College was the pioneer in the movement, without doubt its Board of Trustees will feel special pride in whatever success it may have attained.

For about twenty-five years from its beginning the department of hygiene and physical education was regarded as an experiment. But when, in the year 1884, Mr. C. M. Pratt, of the class of 1879, one of the friends of the college and of physical education, came forward and furnished us with a complete gymnasium, we began to feel that the department was no longer in its experimental stage; it had reached assured existence and prosperity. At the time of its completion, our Pratt Gymnasium, as a plant for physical exercise and recreation, was nowhere surpassed; and there was only one other gymnasium building in the country which equaled it in cost.

Amherst College was the first institution in the land to make physical exercise a compulsory part of an educational course. This she began to do in October, 1861, and ever since has kept the requirement in the curriculum, though with some modification from the original plan. At no time, however, have the students, as a whole, been set to high and severe athletic training; the requirement has been of the minimum amount which a young man may undertake in order to secure and preserve good health.

The plain and severe "old Gym.," with little save bare walls and floor, has developed into the warm, comfortable, well-fixture Pratt Gymnasium, with its abundance of development apparatus, its warm and cold baths and its appliances for physical measurements. To these facilities are now added the Pratt Athletic Grounds, where, for the outdoor season of the year, athletic games and sports may have their full but regulated scope.

In all the forms of exercise, both indoor and out-of-door, there is a continual disciplinary and scientific system to guide, advise, prescribe and, if necessary, compel. Amherst College has thus proved that compulsory physical exercise, as she endows and practices it, is no more an anomaly than is any required mental discipline; only, of course, it must be managed with more flexibility and variety of expression than some other departments of college training.

The object of the department is not to produce an abnormal development of muscles and lungs. Its requirements are of the nature of simple bodily exercises and recreations in such forms and movements as will keep the body in the best working condition. Thus the plan has been to carry on such a system of physical education as for the great majority may secure at once bodily activity and mental enjoyment; and for the few who need it, direction and opportunity to correct imperfect or belated physical development. This is in accordance with the aim of the whole college, which is not to endow any

department with the power of turning out monsters or prodigies of body or intellect, but to develop, educate, enlarge and purify the whole man, to make him in the broadest sense holy.

In accordance with this aim, a prominent thought running through the whole history of the department is, that its work and care belong *to every man who comes to college*. It has not been the desire to make prodigious athletic records or to train remarkable gymnasts and athletes *per se*; it has rather been *to give to all the students* the best opportunities for exercise, recreation and sound physical development. To be sure, we mean to make good records and to gain the championships as often as we can; but the department does not hold these out as inducements for all. These more brilliant attainments hold the same relation in our department that the exceptional attainments of other departments hold in their sphere. It is only the few who take prizes in Latin, Greek, mathematics or literature; nevertheless, the prize stimulus, the *record*, in the literary and scientific work is directly or indirectly an incentive and inspiration to all the college. We do not expect, nor would we urge, every student to strive for these prizes. But the atmosphere, the impulse, the scholarly aroma, that attends that winning of intellectual honors elevates the whole college constituency. In the same way the well-developed, handsome form of the all-round athlete, his physical powers of endurance and resistance, which will inevitably be imitated as well as admired, are a stimulus of incalculable value to young men.

There is, however, a plain and self-limited line between him who enters only upon training and him who places himself on the list for the actual competitive struggle. For all save the precious few who are "cautioned" by the department the training is excellent. But the great majority are early ruled out for the final heats by their lack of capacity for competitive work. The daily practice soon settles the question.

Athletic sports and exercises are a natural development of the call of the age for physical education, as well as progressive attainments from our beginnings thirty years ago. Some evils and excrescences attach to them, of course; but these should be pruned and cut off by judicious treatment; we have no call to cut the tree down to the roots.

The athletic association, the baseball nine and the football eleven are organizations which, from a very small beginning a few years ago, have come to assume such proportions and involve such problems that quite recently it has seemed to the young alumni that, rather than go alone as three separate organizations, they should all be under one board of general management. To this end, in February, 1890, through the presence and aid of some of the alumni, the Athletic Board of Amherst College was organized and adopted by the college students in a mass-meeting. The board consists of Mr. F. B. Pratt, three members of the faculty, the three managers of the athletic associations and three alumni not of the faculty.

This organization was deemed necessary to aid and direct in raising and expending necessary money, in the control of the new athletic field and build-

ings and in some other practical matters. The result of one year's experience is that a larger sum of money has been raised than ever before, the bills have all been paid at the end of the season, and everything has been conducted on so much more stable and business-like principles that the college and the public in general have been much better satisfied with the standing and conduct of all our athletic affairs.

The physique of Amherst students has altered very considerably from what it was in the sixties. This is evident not only to those of us who have numerical data of physical measurements to judge by, but to any casual observer of the two periods.

The young man now in college has, at his entrance, less of the simple, flabby, weak appearance than had the young collegian of 1861. He can play football; he is more ready to stand his ground by his muscle; he is more alert and vigorous in movement. This may be owing in great part to the training he now gets in the preparatory school, which he did not get then. But where did this better preparatory training come from? Did not the influence of a successful experiment reach down from the college? If our preparatory schools are doing good work, whence did they derive the idea of it, except from the experience of those who had tried the methods? And is it not with the highest institutions that ideas of progress begin, and from them that they reach downward to be utilized by all that are below, even to the common school of the nation?

There are two facts in our statistical history which illustrate this point. One is the test of actual strength. Almost from the first beginnings of the department we have possessed and used the two well-known and important strength-tests known as the "dip" and the "pull-up." These show in each individual, with relative certainty, the muscular power of the trunk and the arms. The records of tests with these instruments applied to all the college were averaged for the period from 1861-62 up to and including 1888, with the result that the "dip" stood at 6, and the "pull-up" at 9. For the sake of comparison we have averaged the same items for the past five college years, and find the "dip" to be 7.1, and the "pull-up" 9.9; that is, we register a gain of 9 and 8 per cent. respectively.

Another fact which seems to show the value of physical education to students is found in our record of time lost on account of sickness. Statistics taken from 1861 to 1865 showed that each student, during that period, averaged a loss of 2.18 days annually during term time from being too sick to study. The records from 1885 to 1889 show an average loss of only 1.75 days—a gain in health of 8 per cent.

A comparison of the number of deaths in the decennial period of 1861-70 with the number in the decennial period of 1881-90 shows a much greater viability in the latter than in the former decade. The deaths during 1861-70, exclusive of those who fell in the war, were 6.1 per cent. of the whole number graduated; the deaths during 1881-90 were 3.4 per cent. of the whole number. This certainly indicates a greater vitality now than twenty-five years ago.

From the very beginning of our work in this department a controlling idea has been the necessity of a standard or ideal toward which to work and from which to estimate. Such an ideal, it is true, we may find theoretically expressed in the high art of Greece in her prime, an ideal that is, perhaps, the ultimate. There are few young men, however, who can be induced to look up to an Apollo Belvidere or a Hercules Farnesi with the aspiration to labor for and reach up to this severe height of physical perfection. We have to work with what we find around us; and we *can* ascertain what is the average condition, what the average proportions of the man of the day, and then give him knowledge and appliances whereby he can certainly improve his condition, to some degree, in his own self.

This has been the constant endeavor of the department for the past thirty years. To find the average or mean condition of the Amherst student, to gather data for a complete and trustworthy induction, has been the *rationale* of tens of thousands of measurements taken during the last three decades of Amherst College.

As the result of these measurements, carefully collated, we have compiled a series of tables wherein are exhibited what we regard as the standard dimensions of the various parts of the body. Such tables, foreshadowed some six years ago, have not been hastily constructed; investigations made frequently since then have increasingly established their correctness and value. The basis of measurement is the height. It may be laid down as an assured principle that, given a certain height, the various bodily dimensions ought to be strictly and uniformly proportional. Accordingly we have specified some sixty different particulars in which the student should test himself. Every student who comes to us is furnished with these tables, wherein he sees in its various items the standard measurements corresponding to his height, and side by side with these his own measurements, agreeing or disagreeing with the standard. From this comparison both the young man and the department have the data for estimating his bodily powers and condition, wherein he lacks, and what are his possibilities of advancement in physical growth and development. This, of course, furnishes the basis of watchfulness and advice on the part of the department, and of faithful work and training on the part of the student; attention being given to the points where the need exists.

Although much of this statistical work has been published from time to time, through the various reports of the department, on exhibition schedules, and in the *Amherst Student*, it seems best to append a few anthropometric tables herewith. The results exhibited in these tables were obtained in four different ways, and give accordingly, (1) the average of the whole college, (2) the mean of the whole college, (3) the average of all the men of twenty-one years of age, and (4) the percentile chart. All the measurements are recorded essentially in the form adopted by the American Association for the Advancement of Physical Education in 1887.

Sickness among the students has always had an important share of the attention of the department. Whenever a student is so sick that he cannot at-

tend to his duties and requires an excuse for absences, he must notify one of the physicians of the department—which one he himself may choose. He is not required, however, to take their treatment if he desires to employ any other physician. It is, of course, necessary for the department to know, during term time, the physical condition of every student, as without such knowledge the sick excuse or advise desired cannot be granted.

The aim of the department has been to inspire the students with the importance of proper care of the body ; to make them value health and vigor. We do not encourage the use of drugs for every trifling discomfort or malady. The student is taught to rely on obedience to the simple laws of health, and to cultivate pluck, courage, fortitude, rather than to coddle himself and run to the druggist or doctor for every ache and ailing. And the students are continually warned against letting the weakness of the body control the mind and soul.

The records of our department indicate that Amherst College is a healthful place for the student. During the past twenty-five years the sick percentage of the senior class has been 18.3 ; of the junior class 21.3 ; of the sophomore 24.0 ; and of the freshman class 23.5 ; showing from freshman to senior years a decrease of more than 5 per cent.

While in its main tenor this report must devote itself to setting forth the importance of physical training, the department would by no means set the body above the soul ; nor would it, in advocating vigorous athletic training for college students, seek to intimate for a moment that the soul should be placed under the dominion of the body, with its powerfully developed, often uncontrolled appetites, passions and powers. The bodily life it regards not as the master nor even as the rival of the intellectual and spiritual, but rather as the helper. None of the popular fads and fashions of athleticism, much less the simple necessities of physical education such as the department exists to provide for, ought to take precedence of the higher part of our nature. On the contrary, we would always give to the intellectual, moral and spiritual the pre-eminence that belongs to them, as defining the end and aim of life. At the same time we recognize in man a co-equal trinity of body, mind, and soul. The more perfect the harmony among these three, the more free and God-like the man. If one of the factors be weak the others will triumph over and depress it. And to give to all these elements their just due should be the guiding principle of all who have in charge the liberal education of the day.

The department now reporting to you would merely urge this claim : that we are looking out with zealous and scrutinizing eyes for the best conditions and advantages to the young men under our charge, that they may be fitted to make the highest possible attainments for the citizenship, the scholarship, the Christian vigor of the days to come. To this end, while the intellectual and spiritual remain paramount, yet in order that these may have their true development the physical man needs to be brought up to and kept in its highest normal condition. It is with this physical preparation, subordinate it may be but still noble and worthy, that the department has to do.

Perhaps this report cannot be better brought to its close than by a specification of what, in our judgment, the strong points of the department have been.

It had a wise projector. Dr. Stearns foresaw the wants of the college in this department, and in providing for them wrought not only for his immediate present but for the future.

It has had strong and steady guardianship. When once and again the trial of its strength came, the trustees of the college held to it with unfailing support. When in the board of instruction the various details of its management have been discussed, a most cordial hearing has always been given to the requests of the professor. When new measures have been proposed, or modifications of method, there has been no need of labored effort to carry them through, though, of course, they have often required thorough explanation and adjustment to the work of the other departments.

In fine, we fully believe that the self-reliance developed in the young men who have conducted the class-exercises in the gymnasium and in the body of students who have submitted to them, has been the means of calling out and confirming a stronger manhood. Not only have our captains, directors and managers felt the responsibility of carrying on the department, but the peculiar requirements of physical education among us have led the students as a body, and each man individually, to feel that on the efforts, conduct, words, and thoughts of every one rests in its degree the honor of his class and depends our good name as leader of the cause of physical education at home and abroad. Had it not been for the loyalty and support of the students our department would by no means be standing where it stands to-day.

An anthropometric table is also appended, showing the average measurements of about 2000 students. Another gives the mean measurements of 2086 students. A third is the same representation of those students who were twenty-one years of age. And the fourth presents the items of 2230 students grouped together by the percentile method as proposed by Mr. Francis Galton, of London.*

As already mentioned in this report, the table on the next page expresses the physical proportions and capacities of the students of the college in different ways. And as each of these is peculiar, and entirely separate in its mode of construction, the great similarity of the result in each case corroborates its truthfulness and enhances its value. The general and common method of obtaining the average measures of all the students is an old and familiar way, and easily understood by everybody. The second method of securing the same result by the doctrine of "means" which arranges all the items in groups from lowest to highest and then expresses the one which has the largest numbers, is a more complete and sure result. To select the men of the average age of all college and then tabulate their measurements is certainly a way which will secure a more than probable standard. This is done in the third column. And the plan proposed by Mr. Galton, of England, to arrange the different measures in such groups as will indicate the per cent. of the whole of a series,

*A gratifying corroboration of our anthropometric methods, ascertained too late to be inserted in the text, may here be appended. We have steadily maintained, against conspicuous opposition, that the true basis for physical measurements is in bodily stature. The truth of this is seen in the statistics of the graduating class ('91), which show that in more than two-thirds of the linear and outline measurements of their bodies the growth of the young men has been proportional to their height.

and also the combined series, is an enlarged and better method of expressing the doctrine of means as they may illustrate the subject. This is in the fourth column.

To this is added the detailed average of the growth of the class of '91. The small increase in girth and breadth of head corroborates the idea that the skull attains its growth very early in life, perhaps between eight and ten years of age. And the increase of 0.6 per cent. in height seems to strengthen the idea that stature is obtained before twenty-one years of age. But the prodigious gain in the strength items seems to indicate that the methods of physical training as carried on in well-regulated gymnasiums do bring out the forces of the body in a remarkable degree.

TABLE OF MEASUREMENTS OF STUDENTS OF AMHERST COLLEGE.

	AVERAGES OF 2000 MEASURES.		MEAN MEASURES OF 2086 STUDENTS.		AVERAGES OF STUDENTS 21 YEARS OLD.		50 PER CENT. OF 2230 MEASUREMENTS.	PER CENT. OF INCREASE IN CLASS OF '91.
	METRIC.	ENGLISH.	METRIC.	ENGLISH.	METRIC.	ENGLISH.		
WEIGHT	a61.2	d134.9	64.0	141.1	63.1	138.8	61.6	8.9
HEIGHT	1725	67.9	1720	67.7	1726	67.9	1724	0.6
Sternum	1410	55.5	1410	55.5	1407	55.3	1410	0.7
Navel	1030	40.6	1023	40.3	1025	40.4	1029	1.2
Pubes	860	33.9	860	33.9	864	34.0	864	3.3
Knee	476	18.7	480	18.9	477	18.7	476	0.4
Sitting	903	35.5	910	35.8	903	35.5	905	1.3
GIRTH, Head	572	22.5	570	22.4	572	22.5	569	0.5
Neck	349	13.8	350	13.8	356	14.0	351	2.5
Chest repose	880	34.6	880	34.6	892	36.1	884	3.0
Chest full	927	36.5	925	36.4	933	36.7	925	1.0
Belly	724	28.5	720	28.3	725	28.5	730	4.1
Hips	893	35.1	890	35.0	898	35.3	893	2.4
Right Thigh	517	20.3	515	20.2	521	20.5	514	3.0
Left Thigh	512	20.1	510	20.1	519	20.4	510	3.1
Right Knee	361	14.2	360	14.2	359	14.1	359	0.8
Left Knee	359	14.1	360	14.2	358	14.1	359	1.1
Right Calf	359	14.1	359	14.1	350	13.8	347	2.8
Left Calf	349	13.8	350	13.8	348	13.7	345	2.3
Right Instep	245	9.6	240	9.4	244	9.6	242	0.8
Left Instep	242	9.5	249	9.4	243	9.6	241	0.8
Upper Right Arm	257	10.1	256	10.1	264	10.3	259	6.3
U.R.A. Contracted	295	11.6	295	11.6	301	11.8	295	6.4
Upper Left Arm	253	9.9	250	9.8	259	10.2	252	7.8
Right Elbow	251	9.8	250	9.8	253	9.9	250	3.5
Left Elbow	247	9.7	250	9.8	249	9.8	247	3.5
Right Forearm	267	10.5	270	10.6	266	10.5	262	3.3
Left Forearm	261	10.2	260	10.2	259	10.2	256	3.1
Right Wrist	166	6.5	165	6.5	166	6.5	165	0.0
Left Wrist	165	6.5	165	6.5	165	6.5	163	0.6
BREADTH, Head	155	6.1	154	6.1	155	6.1	153	0.6
Neck	108	4.2	110	4.3	109	4.3	108	1.8
Shoulders	430	16.9	430	16.9	431	16.9	433	3.6
Nipples	198	7.8	200	7.9	200	7.9	196	6.4
Waist	250	9.8	250	9.8	256	10.1	253	3.4
Hips	323	12.7	320	12.6	327	12.9	325	1.8
Right Shoulder Elbow	373	14.7	370	14.6	374	14.7	373	1.1
Left Shoulder Elbow	371	14.6	370	14.6	374	14.7	371	0.8
Right Elbow Tip	461	18.1	460	18.1	462	18.1	461	1.5
Left Elbow Tip	459	18.1	460	18.1	459	18.1	459	1.5
Right Foot	260	10.2	260	10.2	261	10.2	260	1.1
Left Foot	259	10.2	260	10.2	260	10.2	260	1.1
STRETCH OF ARMS	1780	70.1	1770	69.7	1794	70.6	1789	1.3
HORIZONTAL LENGTH	1732	68.2	1730	68.1	1738	68.4	1739	0.6
STRENGTH, of Lungs	a1.5	d3.30	1.2	2.64	1.41	3.10	1.4	27.8
Back	a1.7	d302	150	330	146	321	139	24.0
Chest dip	b6.0		4		7.3		6	38.0
Chest pull up	b9.0		10		10.2		9	20.5
Legs	a166	d365	175	385	172	378	169	26.0
R. Forearm	a41.5	d91	40	88.2	41.5	91.3	39	23.7
L. Forearm	a38.1	d84	37	81.6	39.5	86.9	37	15.6
Capacity of Lungs	e3.77	e230	3.90	238	4.23	250	3.89	4.0

a—Kilos. b—Units. c—Litres. d—Pounds. e—Cubic Inches. All others, Millimeters and Inches and Tenths.

Hygienic Condition of Passenger Cars.*

BY GRANVILLE P. CONN, M.D., OF CONCORD, N. H.,
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THE problem of securing fairly good hygienic conditions in railway passenger cars is one which presents more complications than almost any other question connected with the transportation of passengers.

From thirty to sixty people, representing different ages and physical conditions, having tickets of the same class, ride from one hour to two or three days in coaches having but little ventilation, and becoming more and more filthy with each succeeding day. These people will have variable mental and intellectual powers, from the helpless infant to the crank who seems to study how to make everybody uncomfortable, and as the hygienic conditions become worse and worse on account of the accumulating dust, cinders and other refuse matter, as well as a more disgusting condition of the closets, the women and children are obliged to endure and suffer far more than the men, for the reason that they are more strictly confined to the car, the men more generally going into the open air every time the train makes a few minutes' stop.

When we take into consideration the hygienic conditions that generally exist in an ordinary passenger coach that is used for a continuous journey of from five to fifteen hundred miles, it should not excite surprise that by the time their destination is reached the people are disgusted with their accommodations and are suffering with headaches and, perhaps, nausea. It is true that passengers are more or less responsible for the general want of cleanliness in the car, for very many good people seem to forget themselves when journeying and permit their children, and even allow themselves, to throw upon the floor of the car nutshells, banana and orange peel, crumbs and remnants of lunches. In warm weather these refuse matters will, in a short period, render the atmosphere of a coach almost unbearable to a sensitive stomach, and the effect upon the nervous system is very depressing.

Parlor and sleeping cars under the care of a special conductor and porter are not allowed to remain very long in an uncleanly condition, yet it is not very unfrequent that the closets of these coaches become very offensive and disgusting when making unusually long runs.

It is the common first and second class coach that makes a continuous run of one, two or three days which attracts attention, and when we find the condition of the floor and closet untidy and unclean, and combined with this an atmosphere saturated with the products of respiration and perspiration, we have those unwholesome factors that serve to render most people extremely uncomfortable and unhappy.

It would not seem necessary that a car running only for an hour or two, and then remaining upon a side-track for half a day, should become offensive,

*From *The Weekly Medical Review*.

yet it is not unfrequent in hot weather to find the odor of the closet pervading the whole car, and that, too, after it has been swept and dusted, but no one seems to remember to examine into the condition of the closet. This may be said to represent some of the many conditions that are far from being hygienic in their character.

The first question to be discussed must, in general terms, deal with the subject as a whole, viz.: Is it possible to make the necessary improvements without at the same time making such radical changes in the management of trains as seriously to inconvenience the traveling public?

In the early history of railroads, interchange of cars and great through lines had not been developed. The lines were short, and passengers did not feel that it was a hardship to change from one car to another. Even with such delays so much better time, as well as comfort in traveling, was experienced, that every one was satisfied. Now, long continuous journeys in the same coach have found favor with the public, and the management of our roads has made every effort to meet the popular demand. Much of this through travel is in parlor or sleeping cars, palatial in their appointments, and which, as I have said, are taken better care of than the ordinary coach.

Still, we find that the trunk lines in meeting the demand for through transportation are obliged to place in through trains first and second class coaches, and every one is familiar with the advertisement of such lines—that they are running first and second class, as well as palace cars, to some great railway center, or to the coast, as a distinguishing feature of their line to some other route that requires frequent changes from one train to another. This may be cited as one of the first of the many obstacles to be overcome in the solution of the hygienic problem, as a run of one, two or three days may and probably will show very great changes in temperature, especially if the journey be from north to south or southwest, or *vice versa*; therefore the conditions affecting heating and ventilation must be constantly changing.

Then, again, coaches running over several roads may be subjected to considerable changes of speed, therefore the atmospheric pressure on the outside of the cars will be changed, as the atmospheric pressure on the outside of a car moving at a rate of thirty-five or forty miles an hour, is radically different from what it would be if that coach was running only twenty miles an hour. This may seem a very small matter, but when we reflect upon the condition, and remember that a great amount of fresh air is forced into a car by reason of this atmospheric pressure, it will be seen that it really constitutes an important factor in the ventilation of a coach under our present system of construction of passenger cars.

With the thermometer 20° or 30° below zero, one does not need to sit beside a car window very long before he will realize that a great deal of cold air is finding its way into the space around him, and almost every one has sometimes passed through a section filled with smoke from brush fires or old ties, and has realized how nearly instantaneously the odor will penetrate the car. It appears to me that this feature of air finding its way into a car through every opening

crack is the salvation of the traveler in cold weather, when people will sacrifice fresh air for heat, and therefore close ventilators, as they are called, in the roof of the coach and, so, far as they can, hermetically seal the car. Were it not for the fact that air is forced into the coach by reason of the atmospheric pressure, and that train men and others are passing in and out at every station, thereby keeping the doors in motion, I am not sure but passengers would, in the coldest weather, die from the depression caused by the polluted atmosphere. As it is, they remain sometimes for hours in an atmosphere rendered impure from the respiratory products of all sorts of people, some of whom may have serious forms of disease, and it is one of the immutable laws of health that a system loaded with disease germs or depressed by contaminated air or polluted water, has less resistance to the invasion of disease, and less ability to throw off any premonitory symptoms of ill-health than one who has pure air to breathe and pure water to drink.

In this connection I would add that while there are a great many patent designs offered to the management of our railroads for ventilating cars, none as yet have proved so satisfactory as to be universally adopted. It is but an act of justice to add that many roads have spent a great deal of time and money in experimenting with designs that seem, theoretically, to be of some account, but nothing as yet has stood the test of practical work, under all conditions, like the air brake or some of the other mechanical means of improving the train service, or rendering it relatively safer or more economical.

Many of the devices have good points, and under certain favorable circumstances will bring about results that justify us in predicting more positive improvement in the future. It is too much to expect any system to be effective at all times, as the conditions vary so widely between a car in motion and one standing still at a station that any one system cannot be of use, except as provided for.

Now, while we may hope to secure improvements in heating and ventilation, let us give a moment's attention to some method that might reasonably be expected to improve that department of the service which is known as car cleaning. As now conducted in the Eastern States, there is some one at points where cars are set out or remain over night, who is supposed to have jurisdiction over the work, employ the help, keep their time, etc. At some large railroad centers the work is done by contract, and the contractor receives a stated sum per car, and employs his own help. I do not know of any road in New England that employs any person who has given any special thought to the work, or who might be considered as an expert in such matters, therefore there is little if any system, each workman doing his or her work in a routine, if not in a perfunctory, manner.

Frequently cars are required for use almost immediately, and one or more boys are raising a dust with their brooms before the passengers are fairly out of the coach. In such instances all that is done is to clear the floor of the most prominent portions of dirt and cinders, no attention being given to the closet. Can this order be changed without interfering with the practical working of

the trains? I believe it can; but in order to bring about practical results it may be necessary to educate the practical railroad man in the mysteries of what constitutes a hygienic car.

Sanitarians, while experts in the hygiene of dwellings, grounds, cars, etc., are very liable to be very much too theoretical on matters pertaining to an active train service to assume dictation over conditions only understood by practical railroad men. A happy combination of the practical and the theoretical should be brought out, developed and thoroughly tested under the varied conditions ordinarily found upon all lines of roads, before any radical change should be recommended, for it is only by a general adoption of some practical and economical system by all roads having interchange of rolling stock that an improvement can reasonably be expected.

The management of train service has a vital interest in this question, for an intelligent public is becoming more and more critical upon matters that may affect the health of themselves or their families. People traveling for business or for pleasure across the continent, or from the lakes to the gulf, pay the transportation lines whatever may be the tariff at the time; but they reserve the right to criticise the hygienic condition of the cars, as well as the want of politeness of the employes. It is generally understood that want of politeness in an employe is an unprofitable investment in advertising, and an unclean coach will not pay any better dividends.

In general terms what is needed is thorough instruction of the employe, whose duty it is to take care of the cars, as well as to instruct the train men, that something can be done by them to keep a coach clean when on the road. Frequent inspection should be made, certainly at the end of every division service, by some one so well informed about the service as to detect at a glance any slighting of the work at the place where the coach was last cleaned, and who should report the same at once. The responsibility should be placed, employe corrected, the same as if he had been guilty of slighting a piece of mechanical work that would endanger the lives of passengers.

It has been found necessary to employ men to look over the train at frequent intervals, and those men become very expert in detecting a cracked wheel, a journal that has lost its true alignment, that a nut is missing, or a brake that is insufficient.

Such service may seem humble, and the passenger may scarcely notice the person as he quietly passes around the train, yet his work is invaluable, and you never hear complaints from passengers when an order is received from the quiet man to vacate the car, as it is not safe to run it any farther. Every one from the highest to the lowest accepts his *ultimatum*, and without question makes arrangements to carry out his order.

I have seen coaches so filthy that some one should have had the power to substitute a clean, well-ventilated car for the unclean one. How coaches shall be made clean is a problem of no small proportions, as we have shown that only a limited time can be allowed, and, therefore, to do good work, modern conveniences and mechanical ingenuity must be substituted in part for the manual

labor now employed. Hot water and steam are our best disinfectants, deodorizers and filth destroyers. It is also a well-known fact that surfaces superheated by dry or moist heat become dried and free from the odors of moist surfaces very much sooner than the same surface would if wet with cold water, which in cold weather is of great importance, as a car reeking with moisture incident to a washing in cold weather is about as uncomfortable and unhealthy an apartment as can be found.

Whether it will be necessary to bring all coaches that require cleansing within a reasonable distance of a stationary engine in order to utilize steam from its boiler, I will leave to the practical railroad man; yet I will venture the suggestion that the same result might be attained by attaching a hose to any locomotive near at hand, and which was not to be sent out for an hour or two. To carry a jet of steam into a urinal for a few moments dissolves all the salts deposited upon its surface, and the introduction of steam under twenty-five or fifty pounds pressure, in the corners and crevices of a closet for a moment, will destroy the most virulent germ that is lurking there. How it shall be brought about is only a question to be settled by practical mechanics.

I am not making any claims at originality in this paper, but am rather striving to make the most of what may be found in any railroad yard. Let us use reason in all things, and while these are matters that may seem humble when compared to some brilliant act of modern antiseptic surgery, yet the public are just as much interested in its success, as they are hopeful that they will not need our services as surgeons. Now, as the public become interested, we may be sure the management of our roads will not be far behind in their expectations that we will take cognizance of this work, for it is to us they will look for suggestions. While we are looking after the lives and limbs in the interest of the employes, we should also have a thought for the health and happiness of the passengers.

The Drainage of Cities and its Relation to Public Health.*

BY HUBBARD W. MITCHELL, M.D.,
Of New York.

THE subject of the drainage of cities includes in its more comprehensive sense the kindred subject of sewerage, and the no less important subject of the cleansing of streets and public ways.

All these three points—drainage, sewerage and street cleaning—are so important and so closely allied as to form practically but a single head in the great question of public health. The neglect of these in past ages gives us a long list of mournful experiences in the plagues, pestilences and epidemics that have so often and so frightfully scourged mankind.

* From *The Medical Record*.

If we glance backward along the line of history we find that some of the fairest provinces of the earth have been fearfully afflicted with the ravages of disease, and often whole communities have been swept away or decimated by the invasion of epidemics that owe their existence and spread to the ignorance and disregard of sanitary laws.

Men learn the lessons of sanitary rules slowly, and this is but too often seen in the appearance of loathsome and contagious ills that every now and then stalk among us like a hated specter.

When men aggregate in large numbers within restricted limits, a condition of things at once arises that makes imperative the observance of certain laws to regulate their well-being, and these laws cannot be disregarded without our paying a fearful penalty of sickness, suffering and death.

This aggregation of great numbers of individuals within restricted areas, as in cities and towns, and the maintenance of the public health of these masses of individuals in relation to drainage and sewerage, and the proper condition of cleanliness of its streets and public ways, present a sanitary problem at once complex and difficult.

The waste matters of the human body, and of the bodies of the various domesticated animals domiciled among us, and the large amount of garbage from our cellars and kitchens, make it very important that we should get rid of these waste matters in a way that will not affect the general health. It has always been a matter of the greatest difficulty to determine the best way of getting rid of these waste matters of the body, which pass into the sewers and thence away from the place from which they are discharged. The drainage of cities has been a problem that has enlisted the best talents of engineers and sanitarians. The system of sewerage in large cities is therefore a very important matter, and it has elicited a large degree of engineering skill to devise the best method of constructing these important outlets. No less important is the matter of getting rid of the great amount of garbage which daily accumulates in all large cities and towns. Many of the diseases which afflict the human race have been generated through the decay and putrefaction of these substances which are indiscriminately thrown into the streets and gutters; the sun pouring down upon them and the moisture of the rain has set up the process of decomposition, and this has given rise to disease germs which enter the human body and excite into activity a multitude of loathsome and painful ills.

In reviewing the history of the world, we find that in all ages where a plague or pestilence has arisen the causes of these can be traced to bad drainage and to the decay of garbage and other waste matters which are thrown into the streets. Bad drainage is one of the most fruitful sources of disease. The waste matters which are poured constantly into the sinks and cesspools not being properly carried off, and the places themselves not properly cleansed, have given rise to the process of putrefaction and to a long list of maladies. In tropical cities, where the drainage has been imperfect, and in some places where no drainage has existed at all, periodical epidemics have occurred with frightful regularity and with fatal results. The great plague which visited the city

of Florence, Italy, in the fourteenth century, was caused by the imperfect drainage of that city—in fact, drainage was almost unknown, and all of the effete matters of the city were allowed to collect in cesspools or run upon the ground, and under the hot sun gave rise to putrefying gases and disease germs.

The epidemic of cholera which swept over a large part of Asia and Europe almost annually until recently, was the result in a great measure of imperfect drainage and a gross neglect of sanitary laws. In the superstition of those times they were attributed to visitations of Divine displeasure, and the shrine-cure and the miraculous interposition of saints and others were invoked for their relief, but in spite of these the disease continued its ravages until a more enlightened age pointed out the cause and remedied the defect.

In the city of Rio Janeiro the yellow fever which almost annually scourged that city was found to have its origin in the imperfect drainage of the city and the gross neglect of sanitary laws relating to sinks and cesspools, and the overflow of these upon the adjacent lands was one of the great causes of the production of that dreaded disease. When finally a scientific system of sewers was constructed and the drainage of the city properly carried out, and a stop put to the practice of throwing all manner of garbage into the streets, the epidemic gradually abated.

The city of Panama underwent a similar experience.

Prior to the year 1863 the city of Acapulco, in Mexico, was almost annually visited by yellow fever, and so fatal were its ravages that in some years the dead were left for a time unburied. About this time I had occasion to visit that city, and my opinion was asked, with that of other American physicians, of the cause of these annual scourges. A superficial examination revealed the fact that where sewers existed at all, which were comparatively few in number, they emptied their contents into a swamp a short distance back from the city. Where no sewers existed, and this was generally the case in the town, the waste matters from the houses were poured into cesspools, which were contiguous to the wells which were used for drinking-water. These wells were frequently polluted by the contents of the cesspools percolating through the soil, and this, with the imperfect drainage and the practice of throwing garbage into the streets, was the cause of the yearly visitation of yellow fever. It was suggested by myself and others that a sewer be constructed which would carry the waste matters of the city into the Pacific Ocean, and the authorities lost no time in acting upon this suggestion. Since then yellow fever has visited Acapulco but rarely, and then only in a mild form.

The city of New Orleans was almost annually visited by yellow fever before General Butler reconstructed the levees and the drains of the city, and caused the streets to be daily flushed with a supply of pure water.

The city of Memphis affords another striking example of the effects of bad drainage. The case of Memphis is closely analogous to that of Acapulco. The sewers were badly constructed, and poured their contents into a bayou in the rear of the city. The cesspools here also were contiguous to the wells of drinking-water, and here again the contents of the cesspools percolated through

the soil and poisoned the waters of the wells. To add to this, the garbage of the houses was thrown indiscriminately into the streets, and these causes acting together gave rise to yellow fever, which was so severe and so fatal in that city for many years. When modern science came in and constructed a proper system of sewers, and the drainage of the city was intelligently and properly carried out, Memphis became rid of her annual scourge.

In some of the newer cities of the West the sanitary engineers have constructed things better. In the city of Denver, which lies at a mean altitude of 5,200 feet above sea level, and is, during the summer months, scorched by severe heat, the maintenance of the public health is kept up by a practice of daily flushing the streets through a system of irrigation furnished by the waters of the South Platte River. From this stream, which heads in the Rocky Mountains near by, a copious supply of water is led through nearly all the streets of the city, and the gutters are kept sweet and clean. From the same source the sewers are daily flushed, and this great sanitary measure is one reason why Denver is regarded as a health resort. Salt Lake City is likewise preserved in a similar manner. The sewers of this city are comparatively small, but a boundless supply of pure cold water is obtained from the melting snows of the adjacent Wasatch range of mountains, and this flood is poured copiously through every street of the city, and in this way the health of the city is maintained.

In the city of New York the sewers, in a large measure, are ample and well constructed, yet many of them are in a dilapidated condition. This is the fault of the authorities who have this matter in charge. Our city should be the best drained city in the world. Its configuration is such that it can be easily drained into the two great rivers which bathe its shores. In many cases, however, the sewers are sadly out of repair, and their contents are allowed to escape into the surrounding soil, saturating it with their vile contents, and whenever the streets are opened for the purpose of repairs the foul and offensive gases escape into the air. These defects are being gradually remedied, and under the intelligent vigilance of the Board of Health the sewers are being constructed in a more thorough and more permanent manner. The subject of sewer-gas has perhaps been incorrectly stated, and its importance somewhat overestimated. It is a current belief in the public mind that the gas in the sewers is under a strong pressure, and through any leak in the sewers or waste pipes this gas is strongly forced backward into the houses. This is not altogether true. Experiments have been made by the Board of Health and by the authorities of Columbia College to show what amount of pressure of sewer-gas existed in the sewers, and these experiments have demonstrated the fact that this pressure is inconsiderable. Even where the mouths of the sewers have been exposed above the water-mark, and where the wind has blown with considerable force into them, this has not exerted as great an amount of pressure as one would naturally expect to find.

The system of ventilating pipes in houses leading from the basement to the roof is of great value. No modern house is constructed without a ventilat-

ing pipe, and these carry off the noxious vapors and discharge them in the air at a considerable height above our roofs, practically placing the danger line out of our reach. This system of ventilating pipes, and the ventilating shaft now constructed from closets, largely obviate the danger to health which formerly existed.

Closely connected with the drainage of cities, and quite as important from a sanitary point of view, is the cleaning of the streets and public ways. In the city of New York there are about three hundred miles of streets and avenues. A considerable part of these are paved, but many are not. So vast an area of ground in a city like this is a fruitful source of disease unless it is properly and regularly cleaned, and this problem of street cleaning properly engages our most earnest attention. When it is remembered that these three hundred miles of streets are hourly traversed by the feet of thousands of men and animals; feet that are not always in themselves clean; and when it is remembered that from these thousands of animals there is dropped a vast amount of waste matter, and this waste matter is mixed with the dust and dirt which accumulate in the street, and is ground and pulverized under the feet of these thousands of animals, and under the wheels of thousands of vehicles; and when to all this is added expectorations from thousands of throats, some reeking with tobacco, some foul with disease, such as syphilis and phthisis and many others, and when to this is added the almost tropical rains, and the almost tropical suns of our summer climate, the wonder is that disease is not more rife and more rampant than it is now. If it were not for the mean equable climate and the clear skies and the pure air in which we live this great extent of unclean streets would breed a pestilence among us. To all this can be added the exhalations which arise from the sewer manholes everywhere in the city, which discharge their noxious gases into the air under our very nostrils. When all this is considered, the problem of clean streets becomes one which interests everybody among us. This problem has been variously grasped and studied with a view of ascertaining the best means of accomplishing its purpose. At a recent meeting of the Ladies' Health Protective Association of this city a bill was read which had been prepared at its suggestion by a Mr. J. A. Ambrose. This bill was drawn with the idea of presenting it to our legislature at Albany, and asking that body to enact a law which should place it at once into effect. Its scope, briefly stated, was to divide the city into districts of convenient size, beginning at the Battery and ending in the Twenty-fourth Ward. These districts were to be respectively numbered from one upward, and each to be placed under a foreman. Under him were to be placed a number of men and a number of sweeping machines, with sufficient carts, horses, shovels, hoes and brooms to keep his district in perfect order. It was suggested that the machine should go over every street under his charge once each day, and following the machine were to be a sufficient number of men with hand brooms to sweep the matter into heaps, and these were to be taken up by carts immediately after. This was to be done each morning. During the day the men who had a specified part of the street to take care of were to sweep it with hand brooms, and

place the sweepings into small vessels or tubs mounted upon wheels. In this way all droppings were to be immediately gathered up and not allowed to remain in the street. The workmen were to be selected for their respectability, and were required to speak the English language, to have some badge or cap to distinguish them from others, to be permanently hired by the year, and to be discharged only for cause. Their pay was to be such as would secure to the city proper talent for this work. Each district foreman was to be under the charge of a superintendent, and the whole to be under the supervision of a commissioner of street cleaning. It was thought that if such a bill could become a law, and the process of street cleaning carried out practically in this way, each street would be cleaned once each day thoroughly, and the more important and more frequented streets and avenues be cleaned several times a day. Other provisions of the bill were that no garbage should be thrown into the streets, that ashes and waste paper and all matters of that kind should be carefully collected in barrels and removed once each morning by a proper system of collection in carts. By such a system the streets and avenues of New York could be kept in a clean and healthful condition, and many diseases largely abated and held in check.

Another matter of great importance, which bears very strongly upon the problem of street cleaning, is the maintenance of our pavements in a proper condition. If a pavement is allowed to become broken and uneven no amount of sweeping could keep it clean. Waste matters will accumulate in these hollows and depressions, and under the influence of sun and rain and the putrefaction of organic matters contained in them, and the evils resulting from the decomposition of filth and decayed matters, disease will follow inevitably; therefore it is a matter of the highest importance that in a great city like New York the pavements should be kept in a smooth and excellent condition. In this way the streets can be cleaned with less difficulty. It is also important that gas-pipes and steam pipes, which are laid under so many of our streets, should be constructed of such material as to prevent the leakage of these gases into the surrounding soil, thereby contaminating it. As they are constructed at the present time the leakage is considerable, and when streets are disturbed and torn up for the purpose of repairing these pipes, the soil gives out a most intolerable odor, which is not only extremely offensive but very deleterious to health. This is an evil of considerable magnitude in this city, and should receive the earnest attention of the authorities to abate it as far as possible. In considering the drainage and the sewerage of a great city like New York, it is only necessary to say that while drainage deals with the problem of removing surface water from the streets, and whatever moisture may exist in the soil emanating from springs, brooks and swamps—and the problem of sewerage deals with the carrying off of these waters, and of the waste matters from houses and other buildings, through proper conduits, together with all excrementitious matters—the two subjects of drainage and sewerage may be practically regarded as one. The topography of a city or town has an important bearing upon its system of sewers and drains. In New York city the topog-

raphy is of the most favorable character. The city is flanked on either side by a broad river with a rapid tide, and the city itself is practically a water shed rising at the sides from sea level and reaching a central summit of from five feet to one hundred and fifty feet. With such a configuration and natural slope of the land, there is no reason why New York should not be the best drained and the best sewered city in the world. An ideal system of sewerage and drainage and street cleaning which is possible and practicable in the city of New York may be briefly stated as follows:

(1) To remove all abattoirs as far as possible from the city limits, and to provide for the proper care of the refuse of such places, and to keep them in such order that no unpleasant odors can be detected anywhere about them.

(2) The removal of cattle pens and cattle yards and sheds beyond the city limits, in order that the noxious and unwholesome emanations from these places may cease. Such places, even under the most favorable circumstances, usually give rise to noisome smells, which are deleterious to public health.

(3) The proper disposal of all stable refuse, and its immediate removal from the pens, cellars and other places where it is kept.

(4) The sewers should be of sufficient size and constructed in the best possible manner of brick, lined with impervious cement, and of waterproof stone-pipe, or of iron pipes, or of all three where needed, and so laid as to have their discharging mouths pass into the rivers on either side of the city below low-water mark. Into these main sewers should pass smaller sewers, and into these again the waste-pipes from the houses and other buildings provided with properly constructed traps. In every house and building where water is used and waste matters are to be sent away the pipe connecting with the sewer should be of wrought iron and of proper size. This pipe should extend up through the entire building to the roof, and discharge its vapors at a sufficient height above the houses. Into this pipe should lead all pipes from closets, wash-bows, sinks and tubs, and each should be provided with a well-constructed trap. All such pipes when used for the carrying off of waste matters should be sufficiently flushed with water and kept so clean that no odors can possibly be detected in them. Where the water is abundant, as in our Croton system, enough can be used to keep clean such pipes without undue waste.

(5) All closets should be constructed with a ventilating shaft leading directly to the roof, surmounted with a properly constructed skylight with ventilating apertures.

(6) All surface waters of the streets should be carried off by properly constructed gutters and sewer openings, and drained and discharged directly into the sewers, and allowed in no instance to accumulate anywhere. If springs or brooks or swamps formerly existed in any locality, they should be properly drained, and the drainage carried to the nearest sewer.

(7) Every paved street in the city should be swept by sweeping machines once each day, and the sweepings immediately removed in carts. On streets and avenues where the traffic is great, men should be stationed with hand-brooms and with small tubs on wheels, or handcarts, and remove all droppings and refuse matter several times each day.

(8) No ashes, garbage, waste papers, or other matters should be thrown into the streets or gutters. Ashes and garbage should be placed in suitable receptacles, preferably of metal, which every morning should be placed in the front area, where they can be emptied at an early hour into carts provided for that purpose.

(9) Pavements should be kept smooth and even, so that no sweepings or refuse matter can accumulate in holes or uneven places, and if such depressions should exist they should be swept by hand immediately after the sweeping machine passes over them.

(10) The construction of water-pipes, gas-pipes, steam-pipes, and other pipes, which are laid so extensively under our streets, should be constructed of such material, and with such excellent workmanship, that their contents should not escape into the surrounding soil, and thus contaminate it and make unwholesome when disturbed.

With such a system of drains and sewers, and the daily sweeping of the streets, and of the daily removal of ashes and garbage and other waste matters, and the constant exercise and due care in keeping waste-pipes, sinks and closets sweet and clean, and the ventilating of houses by fresh air uncontaminated by clouds of dust which arise from unswept streets—with such precautions as these the health of this and other great cities can be properly maintained. Such a condition of things can only be brought about by an honest administration of a city government, and the co-operation and support of every citizen within its limits. When this is done intelligently and by all the aids known to modern sanitary science, disease will be largely abated, and the public health maintained at its proper standard. Probably there is no spot in the world so admirably adapted for a great commercial center as the island upon which this city is built. Surrounded as it is on all sides by wide and deep channels, having a regular and well-defined water-shed, and combined with every variety of surface, blessed by a most salubrious climate, there is no reason why it should not be the most healthful residence in the world. Nevertheless it has been in times past scourged by the outbreak and spread of such dangerous and loathsome diseases as smallpox, diphtheria and the whole class of low-grade fevers. This has been due to an improper construction of her sewers and drains, and a disregard of even ordinary cleanliness of her public streets. Science has now come to our rescue, and by her enlightened and beneficent aid there is no reason why the city of New York should not be the most beautiful and delightful, as well as the most wholesome, place of residence in the entire expanse of this great continent, stretching as it does through the most favored climatic zones, from Maine on the north to the rich sub-tropical verdure of the Rio Grande on the south.

747 *Madison Avenue.*

AN excellent remedy for warts and corns is a solution of salicylic acid in flexible collodion. A saturated solution is best.

Care of Idiotic and Feeble-minded Children.*

BY HENRY M. DECHERT, ESQ.,
Of Philadelphia.

UNFORTUNATELY, these children are classed together in popular language as "idiots;" and many persons in their ignorance turn away from any consideration of them and from any organized efforts for their relief. The census of 1880 reported a total idiotic population of 76,895. The term "idiot" is repulsive, especially to the ears of loving parents; and we conclude that many children whom experts would pronounce to be "feeble-minded" were not returned by their families. This conference should take measures to obtain, through the census of 1890, a proper classification of the defective classes. Scientific men have divided these children into four classes; but, for the purpose of individual and State relief, it would be sufficient to have returns under two heads—namely, "Idiots" and "Feeble-minded Children."

The scientific division may be stated as follows, namely:

- (1) Idiocy. (a) Excitable. (b) Apathetic.
- (2) Idio-imbecility.
- (3) Imbecility. (a) Lowest grade. (b) Middle grade. (c) High grade.
- (4) Moral imbecility.

These children, of one or another of these kinds, are to be found in every State and almost every community. What should we do with them? What can be done with them? The answer to the first question will be given according to our knowledge and sense of duty. Some heartless or ignorant man or woman may reply that it is a necessary evil which may be allowed to take care of itself, that these children are suffering the penalty for the offenses of fathers and mothers against the laws of religion or of health. But census reports show that the evil multiplies, and that neglect does not extirpate it. Experience shows that a large proportion of our criminals, inebriates and prostitutes are congenital imbeciles; and yet, in a very large degree, these children are allowed to grow up unrestrained, and without any attempt to improve them. The small number within asylums and training-schools, as compared with the grand total, supports this assertion. The State suffers the penalty of this neglect in an increase of pauperism and vice; and, finally, at a greatly increased cost, it is compelled to take charge of adult idiots in hospitals and almshouses, and of imbecile criminals in jails and penitentiaries—often during the remainder of their natural lives.

Certainly, if anything can be done to prevent these mischievous results, the sternest moralist and cold-hearted or ignorant formalist must agree with us that we should do everything possible to protect individuals and society from the injuries coming to them by these unfortunate children. Who can doubt the existence of an increasing injury to society where it permits such children to grow up without restraint and improvement into manhood and womanhood?

* Read before the Sixteenth Annual Conference of Corrections and Charities, at San Francisco, Cal.

In early childhood, they may be sheltered by fond parents and kind friends; but they outlive parents and guardians, and after a few years become the prey of the vicious, or themselves become the teachers of vice and crime. They had hands, but they were not taught to use them; passions, but they were not taught to restrain them; mental faculties, more or less impaired, which by neglect became more obscure, thus making them servants of their passions and victims of the depraved.

Can we do anything to prevent these evils, but especially can we do anything which will improve these mentally defective children?

The answer is twofold. Actual separation from the other members of the family and of the community alone will prevent these evils. When present in the family circle and sheltered by parents, either rich or poor, they are frequently a menace to the peace and happiness of parents, brothers, sisters and neighbors. This "skeleton in the house" is present in the poor man's house to make life a burden, his only escape being to send the child to the poor-house. The history of such children in many of the poor-houses is a record of shame for the States in which imbeciles are allowed to live in common with worthless tramps and abandoned women. It is true that the imbecile children of well-to-do parents are protected against such evils, either at home or in private retreats; but our proposition is that every family is entitled to this kind of protection, and that the State must have its own defense.

Separation must be secured by opening training-schools for feeble-minded children. We do not mean asylums or places for separate or individual treatment. Let us be guided by experience in charitable work of this kind. Select a tract of land five or ten miles from any city or town, and erect upon it buildings at a moderate cost. Let them also be of moderate size, and in every way adapted to the work before you. A cottage dormitory for thirty children is better than one intended for one hundred children. Provide a common dining-room and kitchen. You will need a laundry, sewing-room, workshops and school-rooms, and large spaces for gardens. Spend more money in preparing the garden soil and in under-drainage to it from the buildings than in external adornment.

We will imagine that you started your school for feeble minded children with one hundred of these unfortunate creatures, and that the institution has reached its second year. You have a competent superintendent and well-educated women teachers, a gardener and a cobbler, a tailor or a mechanic—as you may prefer one or the other kind of work for the boys. You have a laundry woman, a cook and a sewing woman for the girls. Your institution will furnish the answer to the whole question, and, moreover, it is largely self-supporting. The association of these children in their play and work, and in the school-rooms, is perfectly safe when enjoyed under proper restraints. It excites the latent mental faculties and restrains all the brutal or dangerous passions.

A visit to your school will show us boys and girls learning the contents of school books which belong to the primary or secondary schools; girls doing much of the cooking, sewing and washing; boys doing the farm and garden

work, and, perhaps, the cobbling or carpentering and painting; perhaps, also, some of the boys are glad to help the girls in the kitchen or in the tailoring work. Individual charity and county or State aid must, of course, be called in to help the work. After a few years you will be ready to discharge some of the children; and the girls may return home to help in the house-work, and the boys to support themselves as farm laborers, or in some useful way.

An experience of twenty-five years in our school at Elwyn, Delaware County, Pa., now containing 842 children (under the able superintendence of Isaac N. Kerlin, M.D.), shows that thirty-five per cent. of the discharged children are improved to that degree.* Of course, others must remain in the institution for many years or for life; but many of these contribute something to their own support by work in the house or upon the farm. By keeping them, they, their families, and the community generally, are alike benefited.

If, after a lapse of ten years, we should take up the individual histories of these hundred feeble-minded boys and girls in the training-school, and of another hundred coming to manhood and womanhood outside of its bettering and protecting influence, that research would give complete answers to the two questions propounded by this paper, namely, *first*, that by placing feeble-minded children in training-schools we can protect them, their families and the State; *second*, that these children, by association and instruction, can be improved and made self-supporting and happy and, in a fair percentage of cases, safe and useful members of society.

The Relative Value of Foods.†

THE different objects to be accomplished by the consumption of food, that is, for the growth, the supply of waste, the maintenance of warmth, the necessary forces for the continuance of the muscular and intellectual exercises of the human body, should be kept steadily in mind. And the different food principles, the separate, first in order or fundamental element, of food subserving each separate purpose in the body, should also be equally and clearly fixed in mind.

These different food principles, (1) the proteids, (2) the fats, (3) the carbohydrates and (4) the mineral substances, are the real nutrients serving all the needs of the body.

Water, however, should not be entirely left out of the list, as it furnishes oxygen in some measure, and is absolutely indispensable as a solvent, and an agent of conveyance and absorption.

It should be kept in mind also that some of the food principles are mutually convertible to some extent, and one or more may do substitute service in the absence of another for a while. For instance, the protein of food is the

* Mr. Dechert probably draws this statement from the following paragraph:

"The experience of the past thirty years proves that, of those who are received and trained in institutions, ten to twenty per cent. are so improved as to be able to enter life as bread-winners; that from thirty to forty per cent. are returned to their families so improved as to be self-helpful, or at least much less burdensome to their people; and, further, and of greater importance, that one-half the whole number *will need custodial care so long as they live.*"

I. N. K.

† From *The Rhode Island Monthly Bulletin*.

albuminoid basis of the blood, muscles, sinews, skin, etc., but may be in part transformed into fats and carbohydrates, and thus furnish heat to the body.

The carbohydrates are converted into sugar, and may be changed into fats for storage or for fuel. The different articles used for food contain different proportions of the different food principles; and the following table, the work of the eminent chemist "Scammell" through very extended periods of labor, will present the differences of a considerable number in a very lucid manner.

It should not be forgotten that in a general way, but by means no exclusive, the proteids are muscle and tissue-builders, the fats are heat-makers, and the carbohydrates are muscle and nerve-energizers.

ARTICLES.	As Material for the Muscles.	As Heat Givers.	As Food for the Brain and Nervous System.	Water.	Waste.
Wheat	14.6	66.4	1.6	14.0	3.4
Barley	12.8	52.1	4.2	14.0	16.9
Oats	17.0	50.8	3.0	13.6	16.9
Northern Corn	12.3	67.5	1.1	14.0	5.1
Southern Corn	34.6	39.2	4.1	14.0	8.1
Buckwheat	8.6	53.0	1.8	14.2	22.4
Rye	6.5	75.2	0.5	13.5	4.3
Beans	24.0	40.0	3.5	14.8	17.7
Peas	23.4	41.0	2.5	14.1	19.0
Lentils	26.0	39.0	1.5	14.0	19.5
Rice	5.1	82.0	0.5	9.0	3.4
Potatoes	1.4	15.8	0.9	74.8	7.1
Sweet Potatoes	1.5	21.8	2.9	67.5	6.3
Parsnips	2.1	14.5	1.0	79.4	3.0
Turnips	1.2	4.0	0.5	90.4	3.9
Carrots	1.1	12.2	1.0	82.5	3.2
Cabbage	1.2	6.2	0.8	91.3	0.5
Cauliflower	3.6	4.6	1.0	90.0	0.8
Cucumbers	0.1	1.7	0.5	97.1	0.6
Milk of Cow	5.0	8.0	1.0	86.0	. . . . .
" Human	3.0	7.0	0.5	89.5	. . . . .
Veal	17.7	14.3	2.3	65.7	. . . . .
Beef	19.0	14.0	2.0	65.0	. . . . .
Lamb	19.6	14.3	2.2	63.9	. . . . .
Mutton	21.0	14.0	2.0	63.0	. . . . .
Pork	17.5	16.0	2.2	64.8	. . . . .
Chicken	21.6	1.9	2.8	73.7	. . . . .
Codfish	16.5	1.0	2.5	80.0	. . . . .
Trout	16.9	0.8	4.3	78.0	. . . . .
Smelt	17.0	Very little.	5 or 6	75.0	. . . . .
Salmon	20.0	Some fat.	6 or 7	74.0	. . . . .
Eels	17.0	" "	3 or 4	75.0	. . . . .
Herring	18.0	" "	4 or 5	75.0	. . . . .
Halibut	18.0	" "	3 or 4	74.0	. . . . .
Oysters	12.6	. . . . .	0.2	87.2	. . . . .
Clams	12.0	Very little.	2 or 3	. . . . .	. . . . .
Lobster	14.0	" "	5 or 6	79.0	. . . . .
Eggs (white of)	13.0	. . . . .	2.8	84.2	. . . . .
" (yolk of)	16.9	29.8	2.0	51.3	. . . . .
Butter . . . . .	. . . . .	100.0	. . . . .	. . . . .	. . . . .
Artichoke	1.9	19.0	1.8	76.6	0.7
Asparagus	0.6	5.4	0.4	93.6	. . . . .
Bacon	8.4	62.5	0.5	28.6	. . . . .
Carp	18.0	0.8	2.9	78.3	. . . . .
Cheese	30.8	28.0	4.7	36.5	. . . . .
Cherries	0.6	21.0	1.0	76.3	1.1

THE RELATIVE VALUE OF FOODS.

Continued.

ARTICLES.	As Material for the Muscles.	As Heat Givers.	As Food for the Brain and Nervous System.	Water.	Waste.
Chocolate	8.8	88.0	1.8	. . . . .	1.4
Cream	3.5	4.5	. . . . .	92.0	. . . . .
Currants	0.9	6.8	0.3	81.3	10.7
Dates (fresh) . . . . .	. . . . .	73.7	. . . . .	24.0	2.3
Figs	5.0	57.9	3.4	18.7	15.0
Ham	35.0	32.9	4.4	28.6	. . . . .
Horseradish	0.1	4.8	1.0	78.2	16.0
Kidney	21.2	0.9	1.4	76.5	. . . . .
Lard . . . . .	. . . . .	100.0	. . . . .	. . . . .	. . . . .
Liver	26.3	3.9	1.2	68.6	. . . . .
Onions	0.5	5.2	0.5	93.8	. . . . .
Pearl Barley	4.7	78.0	0.2	9.5	7.6
Pears	0.1	9.6	. . . . .	86.4	3.9
Pigeon	23.0	1.9	2.7	72.4	. . . . .
Prunes	3.9	78.5	4.5	13.0	. . . . .
Radishes	1.2	7.4	1.0	89.1	1.3
Suet . . . . .	. . . . .	100.0	. . . . .	. . . . .	. . . . .
Venison	20.4	8.0	2.8	68.8	. . . . .
Vermicelli	47.5	38.0	1.7	12.8	. . . . .
Whey . . . . .	. . . . .	4.6	0.7	94.7	. . . . .

Habits in Relation to Health.*

BY A. W. ALVORD, M.D.

THE greatest measure of health is possible only under the best conditions. Heredity comes looming up for a large share of our consideration when discussing this proposition; but unfortunately for our purpose we are not the conservators of our own interests in the matter of heredity, and have only to do with coming generations. There remains only for us to take these bodies as we find them and do the best possible. The ills and ails of life are thickly strewn along our pathway, but the key to better conditions usually lies in habit. He who gives loose reins to passion or inclination soon forms habits of pernicious tendency that will be most difficult to overcome, while those who persistently struggle against the tide of evil that eventually seems so easy to us, and try for better things, will soon form habits that help to improve the physical as well as the moral nature. Habits, like rivers, have small beginnings; but as their lines begin to lengthen, their force increases, until at last borne on by their resistless sway we are powerless to check our course. In youth we form habits that cling to us through a lifetime with a pertinacity that shows their mastery of us. As nutrition forms the basis of everything in our natures, both good and ill, it will be highly proper to begin with this in discussing this subject in detail.

* A paper read before a Sanitary Convention at Battle Creek, Mich.

He who has learned to eat well has solved half the problems in health already. With fixed habits, based on an intelligent understanding of one's needs, he eats and drinks that which will best develop a healthy being, and in the way best adapted to all its harmonies. The result is a well-nourished organism and a grandly developed being.

It is most fortunate, also, that the formation of good habits in eating does not require us to run counter to our natural tastes, our likes and dislikes, but only to those that are artificial. Among the wealthier classes of society, the tables are daily loaded with foods requiring unnatural appetites and tastes to enjoy them, and an unknown kind of stomach to digest them, consequently the sanitariums, the hotels, hygeia, and the numberless health resorts, are crowded with patients with well-filled pocket-books, seeking to restore the lost art of digestion, while the poor man, never having time or money to lavish on an unnatural diet, revels in the joys of a healthy digestion, eats the food that a kind providence has supplied in very nearly the form and condition in which it should be taken. But there is a class of people who have no time to eat properly, who evidently think that it is wholly unnecessary to take the time needed to properly chew their food. The doctor is well acquainted with them. They are mostly business men, clerks, mechanics and the ambitious man everywhere. These not only eat badly, but, if they are heated by undue physical exercise, they eat and drink just the same, without taking time to regain their physical equilibrium, though they may be laid up the next few days as a penalty for the transgression of one of nature's best-known laws.

The habit of eating between meals, or eating late and hearty suppers, is a fruitful cause of mischief—hence of suffering. It is a pitiable thing to see a family of otherwise healthy children forming habits of eating that will sap their future happiness and their future usefulness, as surely as the habit of imbibing intoxicants possibly could, and to almost as great a degree. Yet Christian parents sit calmly by and see the mischief go on. It is a matter of some trouble to parents carefully to study up the hygiene necessary if children are to make healthy men and women, but we maintain that it *is an obligation* resting on all parents to do this and aid their children in forming such habits as shall insure health under favorable circumstances. It is not my purpose to make an appeal in favor of prohibition, but I must speak from a physiological standpoint in reference to the frequent use of stimulants of whatever form. The physiologists have shown conclusively that alcohol is not a food—does nothing to build up the animal economy. A few years ago this could not be said. The profession was divided. Richardson of London, Flint of New York, Palmer of Ann Arbor, and Davis of Chicago stood almost alone in the advocacy of these ideas. But those who were fortunate enough to listen to that wonderful production of the fertile brain of ex-President N. S. Davis, at the meeting of the American Medical Association in Nashville, must have felt that whatever had been their former beliefs, the weight of testimony to that effect from nearly all the best authorities, without regard to nationality, abundantly proved that alcohol was not a food, nor had it the power to aid the act of digestion, but was rather a hinderance. Certain it is that the continued use of any form of stimulants

lessens the power of the stomach to do its necessary work, robs the nervous system of its best vitality, and lowers the heat-producing force. The alcohol habit is especially severe on youth. Like the tobacco habit, it is the especial bane of young men. Both act on the nerve centers in such a way as to materially affect the heart and other vital organs and thus shorten life. Insurance companies are extremely particular on this point, and the better ones will not admit any young man who has formed either of these habits in excess.

The habit of regularity in all physiological action is of prime importance, notably the habit of retiring and rising. Vital force is much increased and years are added to the ordinary life by attention to these rules. The continued habit of early retiring will insure good sleep, which is so important to restore to normal action our exhausted energies. No doubt some can safely form the habit of late retiring, and prolonged refreshing sleep will follow, and you may see the man at his best again the next day. But where one succeeds, a hundred fail of needed restoration, and only burn the candle at both ends.

The habit of moderation in work and in play, in singing and in talking, is of great value, both before maturity in developing into the best possible, and after maturity in prolonging a life worth living.

The American habit of rapid living and rapid action is too expensive. It may make brilliant men, but it cannot make serviceable men. Their light goes out too soon. Before they have fairly become proficient they must lay down their work, and another will learn it. Hence, the best is never attained.

This is true in the arts and in literature as well as in business and mechanics. Conservatism should be the watchword among Americans to-day. It would give added profits to the employer and added years and proficiency to the laborer.

The Bread We Eat.

BY JANE ELLIS JOY,
Of Philadelphia, Pa.

FOR the proper nourishment of the body, food should contain all the elements of the body in the proportion that these elements will be required for the body's waste and building up. Good old Mother Nature, however, did not leave us to the mercy of our ignorance until we should discover for ourselves the laws of chemistry. Anticipating how long we would be groping after the truth, she selected wheat and put into this queen of cereals all the elements required for the sustenance of man.

On the outside of the wheat kernel she spread a thick layer of gluten, or vegetable nitrogen, for the building up of the strong tissues of the body. Here also she secreted phosphates and the salts and mineral matters which give "tone" to the system; while in the center of the wheat berry she put the starch, for the furnishing of fat and heat.

It follows, therefore, that bread made from flour of the whole wheat kernel is a perfect food, capable of nourishing the body without other additions,

and, under ordinary circumstances, capable of keeping the body in health without medicines. To exclude the gluten of the wheat, with the tone-giving salts, in favor of the starch, is to decrease the nutritive quality of the flour and to furnish a very imperfect article of food. Yet this is just what is done in the manufacture of the common white flour of commerce. The rich blood-making, nerve-feeding gluten, *because it is yellow* is sacrificed; and the starch, *because it is white*, is made into bread, to disarrange the digestive system of the eater. The persistent prejudice in favor of white flour is one of the marvels of the present time. We hear a great deal about "crazes," but is there any "craze" to be compared to the "craze" for white bread—a bread that starves the nerves and the teeth, that furnishes poor, thin blood and flabby muscles?

While it is true, as some one will probably suggest, that we are not obliged to live exclusively on a diet of bread—that meats, eggs, fruits and nitrogenous vegetables offer all the needed elements, in addition to starch, that the body requires, it is equally true that comparatively few people have an opportunity to choose from our meat and fruit-laden markets what they would have. Then the children are to be considered. Young children are not generally fond of cooked vegetables. The little stomach rebels against the grease that is usually mixed with them, and the sensitive little palate is offended by their high seasoning and strange flavors. The child wants bread, and for a few years subsists mainly upon bread. For this reason, if for no other, bread should be a perfect article of food.

But, unhappily, the faults of modern bread have not all been told. It is the habit of many housekeepers, as well as professional bakers, to put butter and lard in their bread to give the latter a "staying" quality and to make it taste "good." Now, not only does the presence of this fatty matter prevent the rapid and complete escape of the yeast while the loaf is baking, but it aggravates the heat-and-fat-producing evils of the starchy flour.

To the oversupply of carbon in food we have no hesitancy in ascribing the unnatural cravings and morbid appetites so common among people of to-day. Craving is only a one-sided hunger, and means that the nutriment furnished is not in proportion to the various needs of the body. With bread made from flour of the whole wheat kernel, we believe appetites would lose their capriciousness, and that many of the difficulties of catering would be overcome, to the great relief of mothers and wives.

Flour of this kind is in the market, sold under various names which indicate its character; but, unfortunately, it is not much sought after, many housekeepers not being aware that it differs from Graham flour. It is somewhat darker than white flour, and produces bronze-colored bread of a sweet, wheaty flavor.

Butter may be eaten with this kind of bread without detriment; but let the butter be spread upon the bread, not cooked in it as "shortening." Cakes, pies and puddings people must and will have, and there is no objection to them in moderation. But bread should be bread. Let us have one "made" article of food free from grease, with a sweetness not derived from sugar, and a lightness that shall make the eater light of heart.

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EDITORIAL.

Clergymen as Disseminators of Disease.

BECAUSE of the great good which they do in the world, because of the divine and sacred nature of their calling, we hesitate to say anything of clergymen. But, as conservators of public and personal health, we feel that we will be pardoned by our clerical friends for uttering a little word of warning, which we are sure will be received by them in the spirit in which it is uttered.

Visiting the sick, going, "*Christ-like*," from one afflicted person to another, with no expectation of reward save the keen and delicious sense of duty well performed, the clergyman is not only always liable himself to contract a contagious disease, but he may be the innocent and unconscious means of contaminating a household where previously no disease has existed.

We must understand that disease germs are as much entities as are grains of corn; while, because of their very invisibility to the naked eye, the danger of transporting them is greatly increased.

We may assume that the clergyman who has visited a case of contagious disease cannot possibly leave the sick-room without taking with him some of the germs or seeds of the disease. They may be on his clothing, in his hair, on his hands or under his finger nails. They are certainly somewhere about his person, and it would be well if he would regard himself as liable to transmit the disease to any one with whom he may come in contact until he has thoroughly disinfected his person and clothing. Of course, it will be only occasionally that he will so convey disease, because the susceptibility to the disease will be present only in very few of those with whom he may subsequently come in contact. But science tells us that the danger is a real one, though its visible demonstration may not be very frequent.

Recognizing the danger, what should the clergyman do to avoid it? We would suggest, first of all, that he should have a special suit of "*contagious clothing*," which he would always don when making a "sick call" at a house where the disease is contagious. When the sick call is over, he should go straightway home, not stopping any place *en route*, and should at once subject this suit of clothing to disinfection by sulphur fumes. Then he should at once take a full bath, carefully washing his head and scraping well his finger nails. These precautions are simple enough, but they would be most potent for good. We would also suggest that special prayer books and other articles should be used for visits to contagious maladies. The constant handling of a book or any

article will cause it to become more or less greasy, and this greasy surface will afford an admirable adhesive plane to catch and hold the germs that may be floating in the atmosphere, while the organic grease derived from the human hands will not offer a bad medium for the growth and reproduction of the disease germs. We trust that our suggestions will be received as they are intended. Doubtless many clergymen already practice the precautions we have suggested, but there are also some, we are sure, who have not yet had their attention called thereto.

Bright's Disease.

IF the city scavengers become neglectful of their work and the slop-barrels accumulate here, there and everywhere in the rear of the houses ; if, day after day, the refuse and waste of a city is left to putrefy and give off noxious vapors, even the least imaginative person will be ready to admit that the health of a city or town so polluted will not be good.

Vague and indefinite symptoms, various and uncertain in their exhibition, will none the less give definite evidence that the vitality of the city has been poisoned.

In exceptional instances it may be that a particular specific disease will be inaugurated by these unhealthy surroundings, but in the vast majority of individual cases, the condition noted will be that of a general but ill-defined departure from good health, which may, with propriety, be designated malaria, since it is in reality brought about by *mal aria*, or bad air ; though we would say, parenthetically, that the use of the word malaria in its ordinarily accepted sense is misleading, because it is in reality calling the effect by the name of the cause. If we bring a stranger to this polluted city and keep him only on the principal streets, hiding from him the slop-barrels in the rear, he will be mystified by the condition which he finds. The water supply and the food, he will learn, are good ; there is no overcrowding ; no particular disease is epidemic ; the people are fairly reasonable, temperate and prudent in their habits ; why, then, is it that they look so badly ? Every one he meets and accosts complains of not feeling quite up to par ; he is able to be out and attend, after a fashion, to business, but there is no buoyancy about him ; every action is more or less of an effort ; he would rather lie down or loll in a chair than anything else ; his intellect is sluggish ; he feels, in a word, that life is somewhat of a burden, and he would give considerable to feel as he used to feel.

What is the cause of this extraordinary condition ? Of course, there must be a cause ; but where is it ? Looking back into the alleys, we find tons upon tons and hundreds and thousands of tons of organic matter undergoing putrefaction ; the air of the city is poisoned thereby ; it cannot properly maintain healthy life, and here we see at once the solution of the mystery of the universal ill-health.

The ill-health of the city has been due to the neglect of the scavengers.

Let us now apply this illustration to the human body.

Among the most important scavengers of the body are the kidneys. If the dead organic matter that has lost its own individual life in the maintenance of the general life of the body is not removed therefrom, it will act upon the system very much as would the neglected slop-bucket, only, of course, its effects would be more concentrated and, therefore, more powerful. A diseased kidney might be not inaptly likened to the neglectful scavenger. Because of its disability, this organ is unable to remove the debris of life; left in the system, this refuse will poison it; not to the point of fatality at first, but to such an extent as to produce a condition of ill-health, so to speak.

As the result of observation, we feel quite confident that there is no other single cause so prolific of ill-defined departure from health as Bright's disease of the kidneys; we are satisfied that the condition of the kidneys is not looked into often enough, for we are sure that the physician would very frequently have made perfectly clear to him otherwise mysterious cases if he would make a thorough examination of the kidneys.

Prevalent as it is, Bright's disease has of late attracted even more attention than formerly, because of the newspaper controversy over the fact as to whether or not Mr. Blaine has this disease. As to Mr. Blaine's condition, we have no knowledge whatsoever, and if we had we would consider it bad taste to rush into print therewith; but there is one point that we would strongly emphasize. If Mr. Blaine has Bright's disease, and has found it out, then is he a subject for congratulation. Some three or four years ago, when it was announced that the Prince of Wales had "Bright's disease," we were constrained to speak of him as the "ever-lucky Prince." We reason thus: When a man has reached the age of forty-five or fifty years, he is almost sure to have some trouble; some of his organs are almost certain to be commencing to give way; of course, this rule is not universal, but it is very general. Such being the case, the man whose kidneys may be commencing to slightly fail him is the luckiest of men, for, if there be one disease that is more notably amenable to hygienic precautions than another, it is "Bright's disease." The man who has "Bright's disease" in its early stages, and who knows it, and has common sense enough to induce him to live as he should, will (paradoxical as it may seem) have his life really prolonged by the existence of the disease; the prudence which he will practice will in truth serve to lengthen his days, while, at the same time, his usefulness to others and his comfort and pleasure to himself need not be minimized one iota. In conclusion, we may accept it as an axiom that "Bright's disease," when its existence has been early ascertained, is not by any means the fatal malady that it is usually supposed to be; but, at the same time, if neglected, if unrecognized, it is a most dangerous foe to life.

THE King of Italy gave \$32,000 on his last birthday to the city of Turin to assist in the erection of a hospital for contagious diseases.

SIR ANDREW CLARK, the great physician of London, said: "I worked twelve years for bread, twelve for butter and twelve more for the luxuries of life."

NOTES AND COMMENTS.

Decreasing Death-Rate of Consumption.

Thanks to new sanitary measures in England, there has been a diminution of more than 30 per cent. in the death-rate from consumption since 1851.

Arsenic in Wall-Paint.

Dr. William N. Swift reports a case of chronic arsenical poisoning in the *Boston Medical and Surgical Journal*, in a child, the source of which was found to be in the blue paint on a wall.

Earache.

The following is recommended for the relief of earache: Chloroform, one part; olive oil, eight parts; put from twenty to thirty drops of this solution in the auditory canal, closing the ear with cotton.

A Cure for Viper Bites.

The Academy of Medicine of Paris has awarded the Orfila prize to Professor Kaufman, of the Veterinary College, at Alfort, for a lotion for the cure of viper bites, consisting of one part of chromic acid dissolved in one hundred parts of water.

A Quaint Epitaph.

The following quaint epitaph on husband and wife—the husband having died first—is to be seen in one of the Parisian cemeteries: “I am anxiously awaiting you.—A.D. 1827.” “Here I am.—A.D. 1867.” The good lady had taken her time about it.

Inebriety and Medical Practice.

The Secretary of the State Board of Health of Iowa announces that he is convinced that habitual drunkenness constitutes “palpable evidence of incompetency,” as the law reads, and that therefore the physician given up to inebriety should be deprived of his certificate entitling him to practice in that State.

Sahara as a Health Resort.

It is reported that European invalids and other persons in search of quiet and a mild climate for winter are beginning to turn their attention to the oases on the northern border of the great Sahara, where the climate is very equable. Railway communication through Algeria makes these places less inaccessible than formerly.

For Tender Feet.

Tramps, either amateur or professional, who suffer from sore feet after an unusually long walk, will experience great relief from soaking the feet once or twice a week in a half-pailful of hot water to which a piece of nitrate of potassium the size of a small walnut has been added.

Typhoid Fever in Milk.

An epidemic of typhoid fever broke out in Sweden recently, and was traced through the milk supply in the family in which the case occurred to a well into which there leaked drippings from a manure heap twenty feet away. The milk cans were washed with this water every day, and when the practice was stopped the epidemic ceased.

Paste for Scrap Book.

It is essential in a paste for this use that it be somewhat elastic and of good adhesive quality. One which seems to answer these requirements consists of 1 part salicylic acid dissolved in 20 parts alcohol, and thoroughly shaken with 3 parts soft soap and 3 parts glycerine. This mixture is then added to a mucilage prepared from 93 parts gum arabic in about 180 parts of water.

Vaccination in Egypt.

According to *El Siglo Medico* the Egyptian Government will soon institute a system of compulsory vaccination. The law says that all children must be vaccinated before they have reached the age of three months, this being done at the expense of the State in the case of the poorer classes. Violations of this law are punishable by a fine or imprisonment.

They Thought They Would Try It.

The inventor of a so-called hair regenerator once sent samples of his discovery, as the story goes, to all the members of the Paris Academy of Medicine. The physicians examined the stuff at one of their sessions and laughed long over the nonsensical preparation. But a few weeks later they whispered to one another, when they chanced to meet: "Do you know, I believe they are growing."

Physical Culture.

According to Dr. E. M. Moore, preventive medicine must look beyond the topics of epidemiology and general hygiene, if she wishes to accomplish the greatest good to our beloved country. She should see to it that the children are healthy and strong, thus giving an earnest of a hardier race yet to come; this may best be done by the encouragement of physical training in the primary schools, as well as in the colleges.

The Doctor's Garden.

The Wiscasset *Liliputian*, of Maine, informs its readers that Dr. C. Peaslee is pulling down the fence between his premises and the cemetery. It goes on to say, "the view from his residence will be much improved after the stones in the cemetery are righted up." The view must be delightful at all times, especially to a physician. The removal of the fence, too, suggests the air of common ownership, the graveyard being, as it were, the doctor's garden. The doctor who can look upon a graveyard and enjoy an easy conscience is invaluable to any community.

Physical Development as a Conservator of Force.

How much force is unnecessarily expended by a person whose physique is uncultivated! He is every day expending the force of two or three men to do the work of one. The Greek could so move that, with a minimum of force, he could attain gigantic results. It is this that made him the best soldier in the world, when he would fight. Cæsar himself was a copyist of the Greeks in this respect; during forty years he spared no pains in cultivating his body to the last possible degree, and that practice gave him great agility. He could labor many more hours than any other man, because there was so little friction in the body.

Growth of Interest in Hygiene.

The growing interest of the public in hygiene is shown by the recent report of the Secretary of the Maine Board of Health. A dozen years ago local boards of health were almost unknown in the State; now there are reports from 400 such boards out of a total of 430 towns. As a result of this hygienic organization, outbreaks of diphtheria, scarlet fever and typhoid fever have, in almost all instances, been confined to the primary cases or the first family the past year; while 120 local reports expressly state that no cases of any one of these diseases occurred during the twelve-month, and forty others fail to mention any such cases.

The Evils of Public Hypnotizations.

Dr. Surbled reports the following case in the *Journal des Science Médicales de Lille* for May, 1891: On the occasion of a public exhibition of hypnotism, an intelligent man, aged 52, of healthy antecedents, was profoundly impressed with what he had seen, and continued to talk of the wonders of "animal magnetism" for days after the performance. Soon, however, he began to act rather queerly, and in about two weeks became acutely maniacal, and died shortly after of inflammation of the brain. During his delirium all his thoughts were of hypnotism, and he was continually making passes as if he had subjects before him. Dr. Surbled regarded his death as the direct result of the impression made upon an excitable brain by the public hypnotic performance.

Napkins.

Napkins which have been taken from the nursery wet should not be used again before they are washed. Many skin diseases have their origin in neglect of this precaution. The soap should also be thoroughly rinsed out of the cloths in the washing, otherwise they are almost sure to cause distressing chafing.

Napkins must *not* be dried in the nursery, if you would keep the infant healthy. Nor should soiled clothes be kept in the nursery closets, or worse still, in a basket under the bed in a sleeping room. Do not tolerate unpleasant smells in the nursery. Dirt is seldom, if ever, odorless. Ferret out smells as you would vermin.

A Funny Health Officer.

The Michigan State Board of Health recently took Health Officer Davis, of Close Village, to task for failing to send in his weekly reports. His reply is unique. He says: "There has not been enough sickness here in the last two or three years to do much good. The physicians find time to go to Milwaukee on excursions, serve as jurors in justice courts, sit around on drygoods boxes, beg tobacco, chew gum, and swap lies. A few sporadic cases of measles have existed, but they were treated mostly by old women, and no deaths occurred. There was an undertaker in the village, but he is now in the State prison. It is hoped and expected when green truck gets around, melons plenty, and cucumbers in abundance that something may revive business. If it does I will let you know."

Sunburn.

The term "sunstroke" has very properly fallen into disuse since its incorrectness was proved, and the word heatstroke has been substituted. It now seems that the term "sunburn" is not exact. Dr. Bowles, of Folkstone, an experienced Alpine climber, says, in the *Archives of Surgery*, that he has noticed that blistering and irritation of the face do not usually arise from direct relations to exposure to the sun, but rather to the effect of light which has been reflected from snow, and which seems thereby to become peculiarly irritating. So long as snow is avoided, the tourist may encounter hot sun with but little risk, whereas sometimes the face gets burnt in walking over snow when there has been no sun at all. The same may be said of the white sand at our sea-shore resorts. One may be exposed daily to the sun's rays in the city without experiencing any irritation, whereas a day, or even a few hours, at the sea-shore will almost blister some persons.

Black is well known to absorb heat, and black clothing is avoided in hot weather; the fact that dark-skinned people bear sun well, whilst albinos blister very easily under its action, must probably be due to some influence exerted by the pigment. Bronzing of the skin, when slowly induced either by the sun or by the snow (as well seen in all dwellers at Mount Moritz), exercises a protective influence, and certain native races, recognizing this, color their faces when about to encounter sun exposure.

Grippe Among Cats.

At a recent meeting of the Paris Academy of Medicine, as a proof of the contagiousness of grippe, M. Ollivier cited the following case: "A lady was attacked with grippe, with copious expectoration and extreme weakness. She was made to suck meat to repair her strength. A morsel she had sucked was given to a cat. Three days later the cat was attacked with grippe, coughed, grew thin, and finally died of the disease.

M. Ollivier recalled that fifteen years ago he laid before the Biological Society an account of an epidemic of grippe among cats. Facts were cited, among them the following: "A cat affected with grippe was taken in by a family. It ate in common with the household cats; two days later it died; the five other cats were attacked with grippe; four died."

Extravagant Funerals.

Mr. W. James Attwood, of this city, who was elected president of the Funeral Directors' Association of Pennsylvania, at its late meeting, very wisely says, in the course of his remarks, accepting the position: "We come in contact with people when they are unable to judge for themselves—they are open to a great deal of wrong-doing. Let us stand on our honor and say, for instance, this lady has lost her husband—she don't know what is best for her—she would willingly impoverish herself for the rest of her natural life in order, as she thinks, to pay proper respect to the dead. We know she cannot afford it. Let us have the honor to speak to her kindly, and tell her what is proper in the way of respect for her husband, and at the same time, with reasonable prudence for the future. This is one way we can advance our profession. I know the majority of you do this, but let us advance this idea, not only among ourselves, but others." These are noble sentiments, and do honor to the man who utters them.

The Appetite of Our Ancestors.

Although our modern ways of cooking are more refined, and all sorts of spices are employed to whet our appetites, it is a lamentable fact that we cannot approach our ancestors in the amounts of food with which they were able to regale themselves. The *Journal de la Santé* cites the following from an old book on cookery, dated 1523:

On the 6th of August of this year a certain nobleman dined, as was his custom, in the apartment of his wife. The dinner was an ordinary one, consisting of two services, one of which was partaken of by all the servants. There were a few guests. The meal was simple but substantial. First service: Boiled capon, breast of mutton, a piece of beef and kid, a swan, a pig, breast of veal, roasted capon, custard. Second service: pullets, quails, pigeons, a venison pie and several tarts.

To illustrate the vigorous appetite of the women of those times the following is quoted from the same book: On the 24th of October of this year two ladies breakfasted on the following: a piece of beef, a goose, sweetbreads, a capon. That is not bad for a simple breakfast.

Spreading Disease by the Clinical Thermometer.

Dr. L. M. Powers utters a word of caution in this connection in the *Medical Record*. He has seen the thermometer used when the amount of mucus accumulated on it was so great as to make it almost difficult to see the register. The majority of practitioners wipe the instrument off with a handkerchief, towel or even the bedclothing, and carefully place it away in a case prepared with a small amount of absorbent cotton in the bottom to prevent breaking, and, unintentionally, to preserve the germs from time to time, to be conveyed to the next unfortunate who may be the first patient called upon. He makes it a rule to clean his thermometer every time it is used, whether he suspects any infectious disease or not, at the patient's residence. He uses soap and water, and if no disinfectant is at hand, he uses on arrival at his office either boracic, carbolic, or corrosive sublimate solution, in order that he may use his thermometer with a clear conscience when it is again needed.

Suggestions for School Hygiene.

Dr. G. F. Witter, of Grand Rapids, Wis., has a most excellent report on the sanitary conditions of the leading schools of this State, which will be found in full in the "Thirteenth Report of the State Board of Health of Wisconsin." The recommendations with which the author concludes his report are so good and so universally applicable that we here reproduce them :

Rule 1. To clean and perfect all sources of water supply, and where schools have no water supply of their own, to furnish such.

Rule 2. In the absence of a better system, to prepare the windows and transoms so that ventilation can be had without causing drafts, and that all schools introduce improved ventilating systems as soon as possible.

Rule 3. To place buildings in good repair, with tight floors, good roofs and underpinnings.

Rule 4. To see that the grounds do not permit standing water, and to prepare gravel or board walks to keep the children's feet out of the mud.

Rule 5. Suitable water-closets for each of the sexes should be provided with every schoolhouse. They should be situated far enough away to secure privacy, be kept in good repair and cleaned and disinfected at least twice a month.

Rule 6. The rooms should be so warmed as to maintain an even temperature, and all be kept comfortable; stoves and furnaces should be safe and in good order.

Rule 7. Rooms should not be overcrowded; not less than fifteen square feet of floor space and 215 cubic feet of air space should be allowed to each pupil.

Rule 8. Blackboards should not be placed between windows; the surface should be dead black, not glossy.

Rule 9. The light should, if possible, be admitted from the rear, or rear and left of the pupil—never from the front.

Rule 10. Desks and seats of different heights should be furnished to suit the size and age of pupils.

The Number of Tubercle Bacilli in Phthisical Sputum.

Dr. E. H. F. Nuttall, of Johns Hopkins University, has shown that consumptive patients expectorate from 250,000 to 4,000,000,000 bacilli in twenty-four hours. Taking the average of, we will say, 100,000,000 per day, the patient would expectorate 365,000,000,000 bacilli a year, and if he lives three years, the total number of micro-organisms expectorated during his illness would be 1,095,000,000,000. Or, multiply the year's annual output of 365,000,000,000 by 70,000, the number of cases of phthisis in this country, and we are confronted with the sanitary problem of destroying 75,000 times 365,000,000,000 microbes every year. These are rather discouraging figures (says the *Medical Record*), but it may be supposed* that the vast majority of tubercle bacilli in the sputum die as the result of intercurrent disease or a pitiless environment.

The Cause of Diphtheria in Rural Districts.

Dr. Longstaff, in a recent voluminous work on "Statistics—Social, Political and Medical," makes an interesting study of the causes of diphtheria, more particularly, of course, as it occurs in Great Britain (says the *Medical Record*). He finds that it is a disease of the country rather than the city. Thus for every 1,000 deaths from the disease in dense districts, there are 1,178 deaths in medium districts, and 1,507 in sparse districts. With regard to specific causes Dr. Longstaff says: "The cause or causes should not be sought for, primarily, in any high development of civilization, such as sewers, but rather in some condition associated with more primitive modes of life. Again, privies and ash-pits can hardly be important agents in breeding or disseminating the disease, or we should expect to find diphtheria exceptionally prevalent in those northern towns where such nuisances reach their worst, whereas the contrary is the case. On the other hand, low vegetable organisms developed in damp dwellings would perhaps fit in with the facts that I have brought forward; or again, some evil special to shallow wells, or other primitive sources of water-supply. The line of investigation, however, which seems to me most promising, lies in comparative pathology. The peasantry live on intimate terms with domestic animals, more particularly cows, sheep, pigs and poultry (including pigeons). Some little known disease of some one or other of these creatures may be capable of inducing in men or women brought into frequent or close contact with them a trivial 'membranous sore-throat;' then under suitable conditions of recipient and environment, the more generally recognized form of the disease, 'true diphtheria,' may result. The poison, perhaps gathering intensity and infectiveness, may then be conveyed into towns by farm produce, such as milk, cream or poultry, conceivably by eggs, meat or vegetables; and lastly, through the persons first infected, the sources of water-supply or the public sewers may get poisoned, and so, indirectly, aid in the spread of the disease."

The suggestion is one that country practitioners should bear in mind. At the same time it is quite possible that the lessened death-rate from diphtheria in large cities is due to a superior sanitary organization.

An Object-Lesson in Weather.

Sergeant Dunn, who sends out weather bulletins under the direction of Uncle Sam, from the top of the Equitable Building, in New York, gives the following general weather indications:

A red sky at night, whether clear or cloudy, indicates clear weather.

A sickly, greenish sky, means rain or wind.

Coppery and tawny clouds are signs of approaching wind.

A dark red sky in the morning means rain or wind.

A gray sky in the morning is a promise of fine weather.

Dark, gloomy, blue skies foretell a wind.

A light blue sky indicates fair weather.

Jagged, torn clouds announce the advent of high winds.

A "high dawn"—when the sun is first seen above a blanket of clouds—forebodes wind.

A "low dawn"—when the sun appears near the horizon—is a sign of fair weather.

In a general way the softer the clouds appear the milder will be the wind. Any change in colors means a change of some kind.

One Cause of Death; with a Moral for Meddlesome Neighbors.

While attending a patient in my earlier professional life—a woman who was in the first stages of intermittent fever—I found one day on making my usual call a small congregation of women assembled in the sick-room. As I entered, I heard the remark: "My cousin Samantha's husband was tuk jist this ar way and only lasted nine days."

"Yes," said a slow-spoken, florid-faced, fleshy woman, "My daughter's husband's sister had the same sickness she's got, and we had the funeral in a week—just a week to a day from the time she was taken. I went to the funeral and counted forty teams in the percession."

"What be yer a givin', doctor?" asked a third. "I tasted on it, and it 'pears like rhubarb and *gingshang* to me, and ef 'tis, why, la'! t'wont do her a bit of good."

"Doctor, did ye ever try pennyroyal tea?" asked another. "My Aunt Hanner's father-in-law, who doctored round here nigh onto thirty-seven year, used ter say as how it did beat nater, how much good a poultice did made of carrots and 'lasses, and he always had one put on. Shan't we try one, doctor?"

"Elderberry juice an' sasafras an' Scotch snuff was what cured me when I was same as she is," volunteered another.

"I writ to her mother last night, that there wasn't no hopes, and she'd better come at onct and take care of the young ones," said a small, vinegar-faced, lean woman, who was sitting in a remote corner.

My patient did not recover. How could she, poor thing? Neighborly kindness killed her. She had not the strength of Samson, neither had she the toughness of a Thanksgiving turkey.

Antibilious.

Dr. Ferdinand Seeger says: "If our bilious friends would throw aside their liver pills and study Nature in her most smiling and bounteous mood, would allow her to tempt them as Eve tempted old Adam, they would take to the fruit, and try pleasant, natural and healthful methods, free themselves of the thick, bilious impurities which make them a nuisance to themselves as well as all around them. Biliousness is one of those demons that can be pretty well exorcised by proper diet and due amount of exercises. Acid and astringent fruit, being rather a medicine than food, is less hurtful to the healthy and to children than is commonly supposed. Instead of being noxious, as some imagine, in inflammatory disorders, it is of the greatest service. Persons of a thick and languid blood cannot eat anything more conducive for the health than fruit, as it possesses the property of attenuating and putting such blood in motion."

Who has not heard of the "grape cure?" It is nothing more than a systematic demonstration of the utility of one of the best and most widely distributed fruits in the vegetable kingdom. We would have people know the good quality, however, of the "grape juice" they drink, because that may be *doctored*, and really harmful.

Food Adulteration in New Orleans.

In his report to the New Orleans Board of Health, Prof. A. L. Metz, its chemist, stated that of 6 samples of cream, 4 were adulterated; 12 out of 18 samples of milk were deficient, 7 in 9 specimens of molasses were sophisticated; and the only sample of wine examined was found genuine. These forty-five samples were received through the officers of the board, and obtained expressly for the purpose of supplying the chief sanitary officer and laboratory with standards. All of the milk and cream analyzed up to date has been found adulterated. The report also gives the results of analyses of various samples of water, from which it is seen that the cistern water used throughout the city was of good quality except where it had possibly become contaminated through faulty construction of the tank or otherwise.

There is an industry peculiar to New Orleans which may be called the "Cream Cheese Industry." This cream cheese is curd, properly molded, and deprived of the excess of whey upon which cream is poured. Nothing wrong was found with the cheese or curd, but the liquid called and dispensed as cream was a monstrous commercial fraud. Unfortunately, no legal standard has been established for cream, and consequently it is difficult to state what should be the minimum of fat contained therein. According to the results of the analysis of pure cream fat therein amounts to 54 per cent., while the amount of fat obtained from samples from venders yields but 4.6 per cent. Some so-called cream sold is a monstrous fraud, as it is but a concoction of sour milk, butter and whites of eggs. The report recommended vigorous measures to stamp out this dangerous practice of adulteration.

Destroy Household Refuse in the Kitchen.

The Board of Health of the city of Boston says in its last report: "We are of the same opinion now as we were when we made our last annual report, that this large expense to the city, and the perpetual nuisance which attends the storing and handling of garbage, should be abolished by burning it in the kitchen, where it first appears as waste, and before decomposition has begun to make it offensive. By this method the only expense to be incurred would be the purchase of the pail or other attachment for the kitchen range, which would be less in a term of five years than the present cost of receptacles for storing the garbage. It is a mistake to throw this material upon the fire, for then the combustion is imperfect, and very offensive odors are given off. It should always be placed in a receptacle specially and conveniently arranged for the purpose, in some part of the stove. The ordinary heat of the stove will dry out all moisture and leave charcoal, to be burned like fuel. There are several patented devices already in the market for this purpose. One of them is obtained only in the construction of the stove, and consists of a receptacle in the side of the stove in which the garbage is put, completely desiccated, and then dumped into the fire. Another consists of a small pail arranged for the purpose, which can be applied to any stove, and is said to answer the needs well."

Christian Science Cure.

The following experience with the "faith cure" is thus related by the wife of a prominent United States Senator, herself the victim. She had not been feeling well, had been depressed and nervous, and somebody advised her to try Christian science. She consulted a "healer," who informed her that she was not ill, depressed or nervous; that such states of feeling had no real existence; that she must lift herself into an exalted atmosphere, keep herself in an elevated condition of mind, and thus free herself from these troubles, which were nothing more than the evidence of sin, etc. She was much impressed by this most spiritual doctrine, and returned to her home, feeling that she had indeed been lifted into the regions of the beautiful and the good. At dinner, surrounded by her husband and children, she continued in this transcendental state—as evidenced by her conversation—and thinks she might be there still had she not been rudely lowered to the level of commonplace life by the remarks of various members of the family about the board. "Mother, you seem absent-minded," said one of the boys; "Mamma, you are hifalutin," chimed in one of the little ones. Finally, the august Senator, who is accustomed to all sorts of attention from his wife, emphatically demanded: "What the — is the matter with you?" "I came down at once," said the vivacious hostess. "I was like the old farmer who had got religion and who owned a ram. Going into the house one day, minus his hat and coat, he said to the family: 'There's no use in trying—I can't be a Christian while that ram is on the place.' I told the Senator that I can never be a Christian scientist while he and the boys are around."

Leprosy in New York City.

A Chinaman, named Hop Sing, presenting a well-marked case of leprosy who has for some time past been running a laundry in New York, was recently discovered by the Board of Health, and when the announcement was made of the nature of his disease there was considerable consternation in the neighborhood. It seems that the man came to New York about a year and a half ago, and it is probable that he was then already affected. When his fellow-countrymen living in the Chinese colony in Mott Street found that he was suffering from leprosy, they raised \$200 to send him back to China, but he simply removed to Newark, New Jersey, and with the money opened a laundry there in connection with another leprosy Chinaman. Eight months ago, however, he returned to New York and established himself in the location mentioned.

As soon as the existence of the case became known the Health Department made an investigation, and Dr. Dillingham, of the Bureau of Contagious Diseases, pronounced it one of undoubted leprosy. For a few days, however, nothing was done in regard to it, as the danger of infection was not regarded as urgent. On the return of Dr. Cyrus Edson, chief of the Bureau, who had been absent from the city, the patient was removed to Charity Hospital on Blackwell's Island.

A Most Remarkable Find—Foreign Bodies Swallowed by a Stowaway.

In the issue of the *Lancet*, of London, of May 30, an editorial details the most remarkable *find* of foreign bodies discovered in the cadaver of an Arab we ever heard of. We quote as follows:

"On Thursday, May 21, the body of an Arab, found dead in one of the ships in the Albert docks, was taken to the Seamen's Hospital; name unknown. A necropsy was ordered by the coroner, and made by Dr. F. Croucher, house surgeon to the branch hospital. There were no signs of disease in the brain or the chest, except a few old adhesions in the left pleural cavity. The gall-bladder was very distended and full. Three small ulcers existed on the anterior coat of the stomach. Several patches of inflammation were found in the small intestine. In the cæcum were found twenty trousers buttons, three cog-wheels (apparently out of a watch, two of them one inch in diameter—these were doubled), one two-inch steel screw bent double and one-inch screw, six pieces of a lock (the biggest piece was one and a half inches long, and one-half inch broad), a circular piece of brass (one and three-fourths inch in diameter folded into four), brass and lead and two key tallies on a ring, one inch in length. In the ascending colon, about five inches from the cæcum, were found a piece of steel wire one-eighth of an inch in diameter and three and a half inches in length, bent double, and one small cog-wheel. The weight of these bodies together amounted almost exactly to half a pound. The body was much emaciated; no subcutaneous fat was present in chest or abdominal walls, or any fat around the kidneys. The deceased was quite unknown; no particulars could be discovered by the police employed to take evidence for the purpose of the inquest. There was no perforation of intestines, or any sign of disease in the colon."

The Proper Hours of Sleep.

The *Lancet* says that the necessity of devoting to sleep several hours in each day is too obvious to admit of serious question. The proper selection of these hours is also, for those who would prolong and usefully employ life, a very needful consideration, though its importance may to some be less evident. We have all met with persons, outside of hospitals and of Parliament, who do half or more of their daily work after nightfall, and sleep long after earlier rising men are awake and busy. Some of these are wont to extol the comfort of their morning slumbers. They describe as immense the refreshment they receive from six or seven hours thus agreeably spent, and no wonder, for the sense of present satisfaction must be very marked, and that for definite reasons. Man, in common with most of the animal creation, has accepted the plain suggestion of Nature that the approach of night should imply a cessation of effort. If he ignores this principle his work is done against inherited habit, and, so far, with additional fatigue. It follows, too, from our ordinary social conditions, that he must use artificial light, and sustain its combustion at the cost of his own atmosphere. Naturally, therefore, when he does rest his relief is in proportion to his weariness. As in many other cases, however, sensation is not here the most reliable guide to judicious practice. Established custom affords a far truer indication of the method most compatible with healthy existence. The case of the overworked and the invalid lends but a deceptive color to the argument of the daylight sleeper. In them excessive waste of tissue must be made good, and sleep, always too scanty, is at any time useful for this purpose. For the healthy majority, however, the old custom of early rest and early waking is certain to prove in future, as returns of longevity and common experience alike show that it has proved in the past, most conducive to healthy and active life.

The Cause and Cure of Baldness.

Dr. M. Joseph Tyson, who writes on this subject in the *Lancet*, sums up the causes of baldness as insufficient exposure of the hair to the sun and air, close, ill-ventilated hats, excessive mental work and worry, the influence of heredity, venereal and alcoholic excesses, constant washing, and the neglect of using some oil or pomade. These causes vary in importance in different cases.

It can be seen that his remedy is not a single or simple one.

Children, he says, should as much as possible do without caps, and hats when worn should be of the lightest description. During the hot season, a stouter hat is necessary for the prevention of sunstroke. A head covering should never be worn indoors, in trains, or in closed carriages. The kind of material employed is of importance. In summer and still weather straw appears to be the best, on account of its lightness and permeability. In winter, hats made of light felt, well ventilated and unlined, are to be recommended. The ordinary tall hat, and the thick, heavy, unventilated top hat, cannot be too strongly condemned. Of course, nothing special can be said regarding hereditary or nervous influences. In concluding, however, he mentions a few

minor points of treatment which should not be forgotten. Too constant washing of the hair is unnecessary, as well as harmful. Once a week is quite often enough for cleanliness, as well as for maintaining the strength of the hair. The same remark applies to constant brushing, for continual brushing, especially with hard brushes, should be avoided. There is a common notion that greasing the hair is vulgar; so many persons fall into the other extreme, and never apply any pomade at all. After the hair has been washed it is certainly beneficial to apply some form of simple grease or oil. When the head-hair is becoming rapidly thinned, some stimulating material, such as ammonia and cantharides, added to the oil, will increase its good effects.

The *Medical Record*, commenting on these observations, says that Dr. Tyson overlooks one important factor in causing baldness, viz., that of contagion. It has been held on good authority that many cases of baldness are parasitic, and due to micro-organisms gathered from unclean brushes and combs.

From the Diary of a Nursling.

A Dr. Guster gave a German newspaper the brief but pathetic journal of a baby who, after thirteen days in this world, departed, leaving these reflections for our instruction :

First Day. Wonderful, heavenly ! At last I am in this beautiful world ! Who would have thought it, that one could breathe, freely breathe, and cry out what one thinks ? I rejoice particularly in the sunlight and blue sky, in the fresh, pure air with its coolness. If I could only see and feel all this splendor !

Second Day. Oh, this horrible heat ! I have been deceived. This air, this water, this light, how entirely different have I imagined it would be. But patience, all will come right by-and-by. The old woman who cares for me does not seem to understand me.

Fifth Day. Still no solution ! If it goes on this way I cannot hold out long. The whole livelong day must I lie buried in feather cushions so that I can scarcely gasp down a bit of air. Two linen and one flannel binders, a little shirt, a flannel slip, a long cushion filled with feathers in which I am wrapped from head to foot, over this a coverlid filled with feathers, the curtain of my crib drawn to, the room darkened with double curtains, the windows closed,—so must I, poor worm, lie from morning till evening. My burning skin is worse off than the hot stove near me, which can at least, as I feel, give off its heat. Oh, that I did know what I shall do ! If I cry it brings the old woman with her milk, which increases my misery ; if my hands are cold while my brain and skin are burning, she brings a few more wraps. I turn my half-closed eyes from side to side seeking help, and my tormentor says “the baby shivers,” and really heats the horrible things at the stove. Will no one come to my relief ?

Tenth Day. Again a fearful night ! I cry, but I am not understood. I must drink, drink, and again drink, until the stomach overflows. A half hour later they give me something with a horrible taste from a teaspoon. Air, air, pure, cool air, light, water ! Shall I then have no help from this world ?

Twelfth Day. Yesterday there was a great council of my aunts and cousins. Each one advised a different remedy for my sickness, but all agreed that its cause is a cold. Warmth was urgently recommended, and I received a new kind of infant food just discovered, and some strengthening wine which heated my brain yet a little more, so that I was deathly still. My body is wrapped so tightly with the roller that my stomach overflows every time a teaspoonful of anything is given. My feet are forcibly extended and enveloped, so I cannot bring them up to relieve the pain, but my feeling is gradually going. Would that all were soon over.

Thirteenth Day. Farewell, thou beautiful world! Thy light and thine air have been denied me, but thither, where I go, there are no fetters.—*Schweiz Blätter für Gesundheitspflege.*

The Reproduction of Bacteria.

It has been very reliably determined that bacteria, when placed in the best conditions for their activity, will double their number every hour. In the most favorable circumstances it will then be seen that a single bacterium will, in twenty-four hours, produce 16,777,220 of its kind. In forty-eight hours, from this single source, the number of bacteria would amount to 281,500,000,000, a quantity sufficient to fill a pint measure, all produced in this short time from a single micro organism measuring but $\frac{1}{15000}$ of an inch. Fortunately these conditions do not often exist. The reproduction of bacteria is opposed by many kinds of forces, and they have a continual battle for existence. In regard to the disease-producing or pathogenic germs, it is important to understand what forces or agencies will retard their multiplication, or wholly destroy them. In emergencies chemistry is resorted to and antiseptics employed, but in the proper prevention of disease such emergencies should not be allowed to arise. Sunlight, pure air and thorough cleanliness are natural enemies to disease germs. They cannot flourish where they have not their proper food, and that is found in dampness, darkness, mold and filth. Keep the habitation flooded with sunshine and pure air, keep away all filth and dampness, and the germs of disease will find no foothold, no nidus in which to breed or food on which to grow. Nature is struggling all the time to keep her domain healthful and a fit habitation for man, but man shuts out the air and light, contaminates all things about him, and disease is the reward of his recklessness and neglect. There is more health in a sunbeam than in drugs, and more life in pure air than in the physician's skill. The sunlight may fade your parlor carpet, but better that than have disease fade your cheek. The wind may "tan" and "freckle" the face, but it is better tanned and freckled than thin and sallow. Help Nature to keep your habitation healthful by allowing her forces an opportunity to operate. There is more health about you than disease. Health is man's natural condition. He has to violate some law before the penalty of disease is inflicted. He can place about him such condition that disease germs will invade his system, or he can live amid surroundings so pure that health will bless him both in his freedom from physical ills and in the sweet consciousness of right living.—*Sanitary News.*

Immigration and Public Health.

While our sanitarians and public health authorities are deeply concerned with the possible importation of some cholera-infected rags or clothing containing the germs of smallpox, it may be well to call their attention to another and very serious disorder affecting the public health (says the *Journal of the American Medical Association*).

The Treasury bureau of statistics has recently made a report on immigration, from which we excerpt the following figures : The number of immigrants from 1789 to 1820 is estimated at 225,000. From that time the number for each decade is as follows : 1820 to 1830, 143,400; 1830 to 1840, 299,100; 1840 to 1850, 1,713,200; 1850 to 1860, 2,598,200; 1860 to 1870, 2,466,700; 1870 to 1880, 2,944,600; 1880 to 1890, 5,176,200.

It scarcely needs comment to show the enormous influence that such a vast mass of immigration has upon the health, welfare and prosperity of this country. A number equal to one-twelfth of the entire population of the United States, and equal to the population of the great State of Pennsylvania, added to this country in a single decade ! It is a notorious fact that the quality of this vast stream of humanity has diminished with each decade, and in just about geometrical ratio with its increase in numbers. What a change from the days when men set out across the seas to escape persecution or to secure wider civil and religious liberty, to the time of "assisted" immigration, when men leave their country not for their own good, but the good of their neighbors. Can we estimate the amount of crime, ignorance and insanity that will be inflicted upon this country in the defective descendants of these wretched beings ?

Every town of any considerable size in Europe has at least one agent of a steamship company who is industriously circulating false stories regarding the rates of wages in this country and the ease with which employment is obtained. These agencies, together with the influence of relatives already living in this country, and the "assistance" freely given by local officers to undesirable persons, have pushed the annual increment to enormous proportions. The absorption of such a mass of reputable and fairly well-to-do persons would severely tax the resources of even this great country, but what shall be done with this vast mass, when the majority are found to be mentally, morally and physically far below the average of mankind ?

In our opinion, it is none too soon to grapple with this great problem. Already the public service of our large centers of population are beginning to struggle under the vast mass of criminality, pauperism and insanity poured into this country from the continent of Europe.

Recently the proposition to add a medical officer to the Cabinet has been freely discussed, and much has been said pro and con. To our mind, the urgent need of such an officer is shown if he is to deal with no other subject than that of immigration, a question fraught with mighty consequences to this nation, and beside which questions of war, famine and trade sink into comparative insignificance.

The Prevention of Consumption.

The high rate of mortality from consumption induced the State Board of Health of New Hampshire to secure the opinion of the physicians of the State upon certain points in connection with the disease, such as its cause, frequency, preventability, treatment, etc. To this end blanks were sent to all physicians of the State, asking them to answer nineteen stated questions. The returns were exceedingly complete, and, as reported in the recently issued annual report of the State Board of Health, make interesting reading. A summary is almost impossible, but the Board presents the following:

The chief causes and the preventive measures to be employed in the disease may be summarized, in the light of our present knowledge of the disease, as follows:

- (1) Consumption is the most fatal disease known to civilization.
- (2) The bacillus tuberculosis is generally believed to be the cause of the disease.
- (3) The disease, when developed after the first years of childhood, is acquired and not inherited, although there may be an inherited predisposition which renders the subject incapable of resisting the invasion of the bacilli.
- (4) The disease is liable to appear at any period of life.
- (5) That there is great danger arising from the use of tuberculous meat and milk. From the evidence which has been gathered we are led to believe the liability to infection from these sources is very great; and to insure public protection in this particular, the State should exercise a careful supervision of our meat and milk supplies.
- (6) That the greatest danger of infection is from the sputa of the consumptive. For this reason, when confined to the house, a spit-cup or spittoon should be used, and when upon the street a handkerchief to receive the expectorations. The spit-cup or spittoon might preferably contain a disinfectant, but if these vessels are frequently and thoroughly cleansed with boiling water, disinfectants are not an absolute necessity. The handkerchiefs should be immersed in boiling water at least once daily before the sputum has become dried.
- (7) No person should occupy a sleeping-room with another who has consumption, although many persons escape infection under such conditions.
- (8) The eating utensils of a consumptive should be washed in boiling water, and care should be exercised that the same glasses, spoons, etc., are not, before being washed, used by children and others. The patient should avoid kissing others or placing in his mouth any article likely to be used or handled by others.
- (9) The dejections of consumptive patients, in cases where the bowels are affected, should be thoroughly disinfected.
- (10) Perfect cleanliness of the apartments occupied by consumptives should be urged in all cases. The bed-linen, towels, etc., should be very frequently put through the operations of the laundry, while the walls should be frequently cleansed and dressed anew. In fact, the whole question of restriction may be expressed in one word—"cleanliness."

CORRESPONDENCE.

Ventilation of Railway Cars.

Editor ANNALS OF HYGIENE:

In the promotion of the interests of your journal and the public, I note that you invite communications from laymen as well as the physicians. In this view I propose to say something about the ventilation of railroad cars. I will not occupy space by discussing the necessity of ventilation, but assume that it is admitted that a railroad car should at all times contain as perfect atmospheric conditions within itself as the air through which it is passing. That it does not is patent to every one at times.

It is said of a famous politician* of the spoils type, when a taxpayer grumbled at his waste of public money, that he replied, "Well, what are you going to do about it?" That is the question the railroad official asks; so does the car-builder as well as the traveling public. It is easy to grumble, find fault and criticise and write volumes on the subject, but somehow I think the fault-finder should be prepared to propose something better. "'Tis better to endure the ills we have than fly to others that we know not of." It is a fact that as a rule railroad cars are not as well ventilated as they were thirty years ago; especially is this true of sleeping cars; while at the same time enormous sums are expended in upholstery, mahogany and brass-work, etc., not a dollar goes toward improving the atmospheric conditions. Millions for pleasing the eye, but not a cent for the nose, lungs or bodily conditions.

Well, what do you propose to do about it? This: I would first make provision for a constant inflow of fresh air, which in winter I would bring in contact with the heating appliances before its discharge into the car. In summer I would arrange the heating appliances to cool the air. Before discharging it in the car I would have it as thoroughly screened as possible from cinders and smoke. I would take in the air at a point most free from smoke or gas, and that is on the side of the car on line with the windows. The roof of the car is the worst place possible, especially in tunnels, cuttings or side-hill embankments, or even on open levels, when there is no wind, and the smoke, gas and cinders cling to the roof. There is no such thing as ventilation without the admission of fresh air, and it is all-important to take it in at the best place. It is a vital point also that the air be admitted without violent drafts; no one will stand a cold draft long at any time. Openings for the admission of air that are liable to this contingency are not to be thought of. It is vastly better to have numerous small openings throughout the car near the floor. So much for the admission of fresh air. For the outlet of vitiated air apertures provided with registers must be placed on the sides of the clear story about four feet apart, and connected with or opposite each register, and on the outside is placed a self-reversing exhaust ventilator. All the registers on the inside are

* William M. Tweed.

connected to one rod, and operated at the end of the car by a lever handle within easy reach. It is simply a nuisance to have an attendant constantly fussing with each register or sash over the heads of the passengers. The tipping sashes in the clear story, so much used, are decidedly ineffective, but they are better than nothing. The deflecting sashes are somewhat better, but they need to be changed at each end of the route, and are often neglected. They are liable to cold drafts when the train stops, as the tipping sashes are at all times. Speaking of deflecting sashes, is it not slightly absurd to use this method when simpler, cheaper and more effective devices can be had that require no attention?

It may be said that with the plans proposed the heating apparatus may not be sufficient for such a rapid change of the atmosphere. The answer to this then would be increase them. This, however, is no real objection, as the inflow and outflow can be regulated without the least difficulty. The slightest reflection will suggest that in a climate like ours there are plenty of occasions when the most rapid change possible is desirable. Nothing within the reach of mechanism can be produced that will not require some adjustment to suit the outside temperature in this country.

WM. G. CREAMER, New York,
Engineer of Railroad Car Ventilation.

SPECIAL REPORTS.

State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania.

PRESIDENT,

J. H. McCLELLAND, M.D., of Pittsburg.

SECRETARY,

BENJAMIN LEE, M.D., of Philadelphia.

PEMBERTON DUDLEY, M.D., of Philadelphia.

J. F. EDWARDS, M.D., of Philadelphia.

GEORGE G. GROFF, M.D., of Lewisburg.

J. H. McCLELLAND, M.D., of Pittsburg.

S. T. DAVIS, M.D., of Lancaster.

HOWARD MURPHY, C.E., of Philadelphia.

BENJAMIN LEE, M.D., of Philadelphia.

PLACE OF MEETING,

Supreme Court Room, State Capitol, Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Thursday in May, July and November.

Minutes of the Nineteenth Regular Meeting of the State Board of Health of Pennsylvania.

THE nineteenth regular meeting of the board was held in the Supreme Court Room, Harrisburg, at 4 P.M., July 9, 1891.

Present: Drs. George G. Groff, Pemberton Dudley, S. T. Davis and Benjamin Lee, Secretary.

The President in the chair.

The Secretary read a communication from Dr. J. H. McClelland, stating that he would

be unable to be present. Dr. J. F. Edwards had also personally expressed to the Secretary his regret at being unable to attend.

An Order of Business, presented by the Secretary, was adopted as the order of the day.

The minutes of the last regular meeting, held at Altoona, May 14, were read and approved.

Drs. Groff and Dudley, who had been reappointed as members of the board, presented their commissions and received the congratulations of the other members.

The Secretary then presented his report, which included the following items:

(1) In accordance with the instructions of the board, the resolutions of approval to Dr. Spencer M. Free and the Sanitary Committee of the borough council of Bangor, had been sent immediately after the last regular meeting.

(2) The Secretary had received a communication announcing the fact that a board of health had been formed in Coatesville, Pa., and that Dr. V. Riel had been appointed secretary. It was the first instance within his knowledge of a woman becoming secretary of a board of health.

(3) A complaint that malignant diphtheria and scarlet fever prevailed at a house at Chestnut Hill had been investigated by Dr. William B. Atkinson, medical inspector. He reported that the drainage from a cesspool had found its way into the cellar and lodged there, owing to the impervious nature of the soil; that the heater in the cellar assisted in disseminating the germs of disease throughout the entire house. One fatal case had occurred. He recommended that the soil in the cellar be excavated and replaced with fresh earth; the plumbing thoroughly disinfected. In regard to the service of a notice to abate this dangerous condition, the Secretary asked whether notice should be sent to the landlord or his agent. The matter was referred to new business.

(4) A serious condition, caused by pollution of the Loyalhanna River, at Saltsburg, by dead animals, night soil, etc., was recently reported to the Secretary by the Rev. S. W. Miller, of Saltsburg. The pollution was, in the opinion of the reporter, sufficient to contaminate the waters used by Pittsburg and Allegheny for drinking purposes. In reply, the Secretary had pointed out to the reverend gentleman that the last legislature had strenuously opposed legislative interference with the pollution of streams in Pennsylvania, leaving the board helpless in the matter. He asked the co-operation of the clerical and other professions in the effort to induce the legislature to pass enactments prohibiting such pollution.

(5) A verbal complaint of defective drainage at Jenkintown had been made to the Secretary. The nuisance was caused by the drainage from ten houses. The complaint was confirmed by one of the Jenkintown physicians. On receipt of notice from the board to abate, a member of the borough council had replied, stating that the street in question would shortly be paved and drained, and the nuisance abated.

(6) A complaint of defective drainage at Altoona had not been confirmed by affidavit as required.

(7) A similar complaint from Chadd's Ford had also failed of the proper support.

(8) A complaint of the pollution of the Monongahela River, at Braddock, caused by the dumping of garbage from a boat at the instance of the borough authorities of that place, had been received. As the Pittsburg authorities had ample power extending five miles outside the city limits, and Braddock was situated within that distance, no action was deemed necessary.

(9) A complaint of the pollution of a stream at Bulger, Allegheny County, by decomposing whey and refuse from a creamery, had been made to the board. A similar condition existed at this creamery last year, and the abatement of the nuisance had then been ordered. The board directed that immediate action be taken.

(10) Application having been made for a copy of the death certificate of an Italian who was killed at Pottsville, on the railroad, the Secretary had applied to the burgess for certificate. The board directed that application be made to the county coroner.

(11) Complaint had been received of a nuisance at Morrisdale Mines, Clearfield County, from a slaughter house. The usual forms had been sent, but no reply had yet been received.

(12) A complaint that diphtheria prevailed in a malignant form at Prestonville was investigated by Medical Inspector William B. Atkinson. He reported the defective drainage of a cellar, where the fatal cases had occurred, and had ordered the nuisance abated and the cellar cleansed.

(13) Two complaints of defective drainage at Lansdowne, Delaware County, had been received, but not being in proper order had been returned for amendment.

(14) A communication was presented from the Board of Health of Lancaster, complaining that undertakers declined to pay the charge of twenty-five cents for burial permits, and asking for a decision of the board as to its power to make such a charge. The board referred the matter to new business.

(15) The Secretary announced his appointment by the Governor on the commission for considering the removal of the Quarantine Station of Philadelphia. A copy of the bill was also read. The commission had recently met at Harrisburg, and had appointed the Governor as chairman, Dr. Henry Leffman as secretary, and George J. Brennan as clerk. The commission had already visited the Quarantine Station. The Secretary requested permission to incorporate the regulations of the Board of Health of Philadelphia for the disinfection of vessels and baggage in the annual report. Referred to new business.

(16) In establishing a local board of health at Phoenixville, the authorities there had adopted the Model Ordinance of the board, and proposed to go to work vigorously to enforce it.

(17) A complaint of an epidemic of typhoid fever in a suburb of Lancaster, received since the opening of the meeting, was ordered to be investigated forthwith, Dr. Davis supporting the complaint from his personal knowledge.

The Secretary's report as a whole was now adopted.

Reports of Standing Committees being in order, the Executive Committee (Dr. Pemberton Dudley, chairman) reported that one meeting had been held since the last regular meeting of the board, when accounts, vouchers numbered 438 to 452 inclusive, amounting to \$588.55, were submitted and approved. The report was accepted.

The Committee on Vital Statistics (Dr. B. Lee, chairman) stated that Dr. Hoppin, of the Prothonotary's office of Philadelphia, reported that 362 physicians had registered in Philadelphia during the year ending July 1. The names of sixteen physicians who had died in the city in the same period were also given.

The committee also presented a copy of coroner's certificate, respecting the body of a stillborn child thrown into the Monongahela River, at or near Mifflin Township.

The report was accepted.

The Committee on Preventable Diseases, Disinfection and Supervision of Travel and Traffic submitted a report prepared by the President, Dr. Groff, being a circular on sunstroke, which had been submitted to Dr. H. C. Wood, of Philadelphia, for revision, and was recommended to be published in a leaflet form.

The report was accepted.

No report being forthcoming from the Committee on School Hygiene, the Secretary was directed to request from the chairman (Dr. J. H. McClelland) the return of "Circular on School Buildings," in order that the same might be published.

On behalf of the Committee on Sanitary Legislation, Rules and Regulations, Dr. B. Lee reported that House Bill 635, for the appropriation to the board, had been amended, and the sum of \$6,000 allowed per annum for the next two years. A bill to prevent the drainage of cemeteries contaminating the water supplies of cities of the first class, and a bill to prevent contamination of waters by abandoned oil and gas wells, had also been passed during the last session.

Nomination and election of a president for the ensuing year being in order, Dr. Lee moved, and Dr. Davis seconded, the nomination of Dr. J. H. McClelland. The vote was taken by ballot and resulted unanimously in favor of Dr. McClelland, who was declared duly elected for the ensuing year.

New business being in order, the question whether landlords or their agents were to be communicated with in case of nuisances, was called up. The board decided that notices be sent in such cases to landlords.

In the matter of a charge for burial permits at Lancaster, the Secretary was directed to look into the question and satisfy himself as to the existence of laws and ordinances conferring that power upon the local board, and to acquaint the local board with his decision.

Ordered that the circulars on "Disinfection at the Quarantine Station" be incorporated in the annual report.

Accounts, vouchers numbered 438 to 452, amounting to \$588.55, which had been audited by the Executive Committee, were submitted to and approved by the board.

The matter of holding a series of local conventions in place of one annual sanitary convention was brought up by Dr. P. Dudley and discussed, but no action was taken thereon.

The board then adjourned.



KUSATSU, JAPAN.

THE
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COMMUNICATIONS.

Hot Bathing in Japan.—The Kusatsu Baths.—Cure of Leprosy.

BY W. K. BURTON,

Professor of Sanitary Engineering, Imperial University, Tokio, Japan.

THE use of the hot bath is carried in Japan to an extent that it is carried, so far as I know, nowhere else in the world. Not only does every Japanese, of high or low degree, consider a hot bath once a day a necessity, but he enters the water at a temperature that is perfectly astonishing to one who is only accustomed to what is called "the hot bath" in Europe and America.

The baths are either private or public. Any family of the least pretension—in fact, all but the poorest—have a bath in or near the house. This is an enormous wooden tub, generally oval in plan, with a large copper tube passing vertically through the water near one end. In this tube charcoal is burned, and the water is thus heated. In the towns the baths are always in the houses; in the country they are often several yards away; and it is a sight, strange for the first time, to see the various members of a peasant's family trooping out, one at a time, in nature's garb, to take their turns at the evening bath.

The public baths are of the same nature as the private, but are generally square in shape, and are, of course, much larger. In these public baths it used to be the universal custom for men and women to bathe together, and the baths were commonly open to the street. Of late years, out of deference to foreign prejudice, the baths in the towns have been closed in, and there is always a division between the women's and the men's bath, although it is of the flimsiest nature. It is sometimes merely a bamboo laid across the bath at the surface of the water. In the country, and especially at all places where there are medicinal baths, promiscuous bathing is still common. It is not, however, to be supposed that there is any indecency connected with this custom. In fact, the surprising thing, at first, to a stranger, is the complete want of knowledge "that they are naked" that the bathers display. Were one to show that he (or she) "knew that he was naked," it would be taken as certain indication of a prurient mind.

Besides the private and the public baths, there are what may be called

semi-public baths at all hotels and tea-houses. These are almost always used by guests immediately after arriving at such houses.

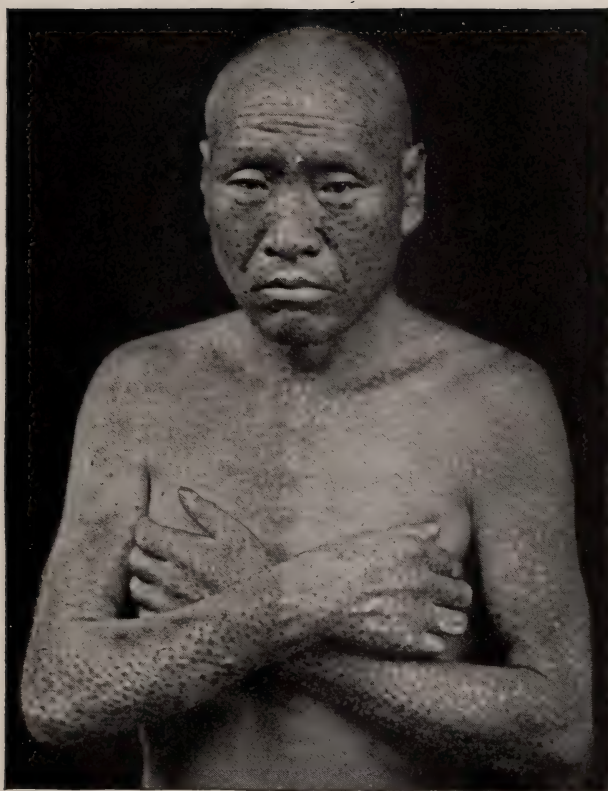
The general time of taking the bath, except in the cases just mentioned, is after the work of the day is done, at which time the dress is changed also, but those who have leisure often bathe several times a day.

There has been much exaggeration as to the temperature at which the baths are used; yet if anyone tries to bathe at the temperature I am about to mention, he will find that they are high enough in all conscience. After carefully testing the temperature of many baths that Japanese were bathing in, I conclude that anything below 110° F. is considered too cold, anything above 120° F. unpleasantly hot, although I shall presently give cases where baths are used at temperatures considerably higher even than this. It may be said, roughly, that any temperature between the two limits mentioned is considered agreeable, although women and children seldom care for baths quite as hot as 120° F. In bathing, the bather, after laving himself with the hot water while sitting on the floor of the bath-room, and pouring it over his head, enters the bath and sits immersed in the water quite up to the neck for any length of time from two or three minutes to a quarter of an hour, according to his inclination and the temperature of the water.

Now, a word or two as to the effect on the health of the people of this custom of incessantly bathing in very hot water. When first Japan became open to the world, and the Japanese began to take the advice of Western folks on all manner of things, the Western physicians strongly condemned the practice for no other reason than that it was so foreign to their ideas that it must be bad. A regulation was issued that the public baths must not be heated above a certain comparatively low temperature, and there was consequently great discontent among the people.

This discontent gave rise to an investigation of the subject by physicians, both Japanese and foreign, with the result that, except in the case of those suffering from a weak heart, the custom was pronounced not only harmless, but beneficial. The high temperature thoroughly opens the pores of the skin, and, even without the use of soap, a healthy skin action and a cleanliness are secured that are not to be had by any amount of washing in cold water or by the taking of what we call "hot baths." The hotter the water the less is the chance of catching cold after the bath, while a really hot bath taken just when it is felt that a cold is coming on will generally stave it off. There can be no doubt that the general healthiness of the Japanese, living among sanitary surroundings in many ways very defective, is greatly due to their habit of frequently bathing in hot water.

Those who have never taken a really hot bath can have no idea of the refreshing effect that it has, say, after a tedious journey. Instead of the relaxing effect that the tepid bath which we call "hot" has, it is highly invigorating. Curiously enough while, in cold weather, it has the effect of preventing the cold from being felt for several hours after bathing, it has, after a few minutes, a cooling effect in very hot weather. I suppose this is to be accounted for by



RECOVERY FROM LEPROSY.

the fact that the skin is brought into healthy action. The effect of a really hot bath on the temperature of the body may be interesting to some. The following is the result of observations made on myself:

Temperature of the air	75° F.
“ of the bath	116° F.
Time in bath	5 minutes.
Temperature of body before entering the bath	96° F.
“ at the end of five minutes, while still in bath	101.5° F.
“ one minute after leaving bath	102.4° F.
“ two minutes after leaving bath	102.4° F.
“ three minutes after leaving bath	101.5° F.
“ at the end of ten minutes after leaving bath	98.6° F.

That is to say normal.

The rise of temperature after leaving the bath is curious, but it had already been observed by Prof. E. Baelz.

It might be supposed that the habit of public bathing might lead to the communication of infectious diseases, the more especially as, in some of the public baths and the hotel and tea-house baths, the water is not changed as often as might be advisable. All that can be said is that investigation has so far failed to detect such communication of diseases, and that, if there is occasionally a solitary case, the evil is much more than counterbalanced by the general improvement in health that results from the cleanliness gained by general hot bathing which could not be indulged in by the poorer classes, were it not for the public baths.

In the olden days so essential was hot bathing considered to the health of the people, that there was no fixed charge for the use of the public baths. Those who could not afford to pay might use them for nothing, while there was a scale of charges, fixed by custom, for those who were able to pay a small sum. At the present time the charge for the use of public baths is one cent or one and a half (silver currency).

[TO BE CONTINUED.]

Lessons of Public Sanitation and Their Historical Development.*

BY DR. MAX SCHOTTELIUS,
Professor of Hygiene.

[Specially translated for the ANNALS OF HYGIENE by Lewis H. Taylor, M.D., of Wilkes-Barre, Pa.]

HE who would advance any department of science, and for this purpose desire to have a clear idea of its teachings, must be acquainted with all things which have been previously presented for the accomplishment of the same pur-

* An address delivered at the celebration of the founding of the "Society of Natural Sciences of Freiburg," Baden, on March 5, 1890.

pose. This is true of all branches of human knowledge. Although the lawyer dare not publicly enter upon his profession without a knowledge of the history of law, or the theologian without a knowledge of church history, or the philosopher without a full understanding of the history of philosophy, we have scarcely yet recognized the importance of placing medical science on the same plane as her sister sciences. And yet, each thoughtful physician recognizes the fact that only as we view with our mental eyes the observations and achievements of the past can we be safe from the seductive idea of the present day, that we are beginning knowledge anew, when really we are putting forth old and forgotten things as new.

Perhaps the most important achievement of recent times is the recognition of the fact, almost relegated to oblivion, that medical science also has a history which is closely connected with the development of civilization, and a knowledge of which enables us to assist in the development of our manhood. If this is true of medical science in general, so is it true, none the less, of each single part of the many branching subjects; and if a knowledge of the past has its value for all times, so is it of especial value in the present, whose great discoveries remind us of the many new directions in which scientific investigations may be constantly turned.

We find ourselves in a changing period. We are in the latest line of better knowledge concerning the existence and value of that light to which we owe a number of facts which have contributed to the advancement and improvement of natural science, and this chiefly in the direction of medical ideas.

Yes, those achievements which have culminated in the visible perception of living disease-germs are so fully new and of so far-reaching importance that many believe we are on the eve of attaining the utmost limit of medical science, and that we will soon be in position to shield mankind from all disease.

Another important medical discovery of our time is that which shows us the healing of a diseased body is much less in the power of man than the preservation of health through timely precautions; or, in other words, that we can assist but little when the body is once ill, but we must leave nature almost alone in the conflict; but, on the other hand, we can assist greatly in keeping our bodies sound and strong and in continual readiness for warfare with disease. Besides this we can protect such bodies from disease-breeding influences of every kind.

It is the knowledge of this fact that has rightly directed general interest toward hygiene, and we are not wrong in saying that it is the physician who has called the public attention to these questions, notwithstanding he is acquainted with the law of his professional existence, that disease is the material needed for the exercise of his trade. Many think the song of the doctor in the old Hindoo Rig-Veda still suitable for us:

"The teamster wants wood,
The doctor, diseases;
And the priest gifts for the altar."



BATHING IN JAPAN.

But the reverse is true ; we carry on no trade in disease, but we labor with the utmost measure of our ability for the good of the individual and of the body politic. We should discover the noxious principles which, in the many-sided development of our civilization, ever in new forms, threaten the health of mankind. We endeavor to combat these evils and to master them either by prevention or by their destruction. We give practical value to the teachings of nature, strengthen the mental and bodily powers of man that he may be equal to the increased demands of our times, and, with sound mind and trained body, keep pace with the changed conditions of the life of to-day.

These are the aims before us ; and with a proper knowledge of their extent, and with due regard for the fact that we are dealing with the fundamental conditions of happy lives, we labor in all things, so far as human culture extends, for the furtherance of public care of the health.

The means for the accomplishment of these ends were never so extensive and so valuable as to-day ; and it can be predicted with great probability that if the peace of nations be not destroyed, and with it the development of civilization, the next ten years will see us much further advanced in measures for the preservation of life and health. It would, however, be false if we were to assume that the importance of human health to the State and to the individual had not been recognized before by physicians and by statesmen. It would be doubly unfortunate if we, in the proud possession of the results of our time, should despise the work of those who have preceded us, or forget that we are greater than our ancestors only because we stand, as it were, on their shoulders.

To-day we can appropriately quote the words of Hippocrates : " We should not regard the work of the ancients as useless and crude because they did not in all things attain to perfection, but we must, on the other hand, wonder the more that they came so near perfection in some respects and, in spite of the ignorance of their times, achieved such excellent results."

In the department of hygiene, the results of the present are largely accomplished by utilizing the experience of our predecessors. The motives for governmental protection of health have changed from those of former times. It is well worth while to learn the history of the past for use in the future, so that we may avoid the errors and faults of former years and be able to take up these old but fruitful problems and solve them with the aid of our more recently-acquired scientific knowledge.

It is also worth our while to review the principle, from which a higher and better estimate of the value of health has arisen, especially since, for a century, the care of the body had been entirely neglected, while many centuries earlier even greater care was given to it and to health than in the present day. But it is impossible to present in brief the historical development of general hygiene, and thereby deduce further lessons from the same, for as yet a careful history of this part of medical science is wanting.

Yet, since it seems desirable that a further insight into the nature of our science should be given, I will attempt, in short sketches, to show forth the

importance with which public sanitation was regarded by the civilized States of antiquity, and from the experiences of the old will endeavor to lead us on to the lessons of the new.

In the earliest ages of mankind there existed no medical science, and still less did anyone think of protection and care of the health. Singly, or united in small bodies, men of that age had to battle for existence with the strength of arms. He who could not establish himself by the force of his bodily strength went under, but the strong remained and increased.

As the results of combats with their fellows and of their assembling together for the purpose of the chase, there grew together members of a family as contrasted with the individual, and they soon saw the importance of uniting many together for the common good. After the subsistence by the chase came the herding of cattle where the richness of the land permitted; after the herding of cattle, agriculture developed, at first, perhaps, temporarily, then as a permanent institution, after which cities and States arose.

But as the origin of the human race is enveloped in mists and darkness, so also is the origin of medical art. Without doubt, Asia is the cradle of all human culture. By the holy waves of the Ganges, flowing from the temple under the earth, where the ancient word of the Veda passed as incontrovertible law, there for thousands of years men regarded the prayers of the priests and the commands of the king as the groundwork of their knowledge.

Oral and written tradition was borne forth from the East to the boundaries of Korea and, perhaps, even across the Pacific Ocean. The learning of these ancient civilizations sounded through Persia to the coast of the Mediterranean and far on into the valley of the Nile. Did Hindoo wisdom, in its journey over the earth, find others to whom it brought the better culture, or did this knowledge, bound together with the experiences of other early people, grow forth on a common stem? Or did the ancients of Asia, in their wanderings, find no traces of others? Who can tell whether these questions will ever be answered? In this same manner the beginnings of medical science lie shrouded in darkness, and may be partly traced back to Indian origin and partly to the individual experiences of other ancient civilized people. Concerning this there is but little to report. The papyrus of Ebers, which represents one of the seven Hermetic books of the Egyptians, and whose transcription (not the original) must have been made at least 3,500 years before Christ, acquaints us with the medical writings of the Egyptians. But uncounted centuries, wrapped in darkness, had to pass away before men learned to think, then to express their thoughts, and then to give these thoughts permanency in writing.

We stand far removed scientifically from the cultured man of that period who, poetically speaking, was not greatly different from us in his inner culture. In this period of an old though highly developed civilization we meet the first traces of public care of health.

Medical science has improperly been called a child of luxury; it is not a child of luxury, but of civilization! Only among civilized people does man develop an interest in humanity, and care for the lives of his fellow-men. Only

where civilization is fully developed does this general interest in the life and bodily well-being of the individual appear in the visible form of sanitary laws.

We find that the ancient Egyptians recognized in their public ordinances the importance of air, water and location. The artistic manner in which they buried their dead is well known, a measure of far-reaching importance in a thickly-populated land, whose management was rendered more difficult by the regular inundations from the Nile. The disposition of dead animals was also provided for by the laws of the State. Plutarch tells us that since in the night pernicious vapors arise, different incenses were used for purifying the air: in the morning, resin; at noon, myrrh; and in the evening, a mixture of various perfumes.

Euripides learned the healing power of sea baths of the Egyptians when he accompanied Plato to Egypt and was there seriously ill. Perhaps the verse in *Iphigenia*, which even for us contains much truth, was written on this account: "The sea heals all the sufferings of man."

The State also undertook the education of the children; they were plainly brought up, and accustomed to a temperate manner of life; they were required to go barefooted and to eat nothing but roots, fruit and the dried pith of the papyrus plant (Diodorus).

In public inspection of cattle those found healthy and chosen for slaughter were marked by the inspectors with a piece of paper wrapped around the horn and a seal of clay impressed thereon—a measure which to-day, after 5,000 years, is used with better means, but in almost the same form.

In the interest of public welfare the Egyptian physicians were also subject to inspection by the State. They were required to govern themselves according to certain prescribed rules which originally were written on stone, but later on papyrus. Herodotus says of these rules of treatment: "The medicines of the Egyptians are simple, and in their use one has nothing to risk; they can be taken like nourishment." Among their rules are some especially interesting—*e. g.*, that which forbids the Egyptian physician to give any medicine in acute fevers before the fourth day. This principle harmonizes in a measure with the opinion expressed in recent times concerning the meaning of fever in infectious diseases—*i. e.*, that we come more and more to the conclusion that the elevation of temperature in these diseases is not to be regarded as something dangerous to be combated, but the fever is to be looked upon as the natural helper of the system in its fight against the bearer of infection; and so we wait now, exactly as was prescribed in the laws of the ancient Egyptians, a sufficient time, and rightly several days, before we interfere with medicine in acute infectious diseases.

Although we recognize the high development of the old Egyptians in relation to public health, we must not, on the other hand, forget that the above-mentioned rules present specially-selected examples chosen for the purpose of showing the condition of public sanitation of the time. In contrast with this we find scarcely a trace of scientific practice of medical art; anatomical knowledge is almost entirely wanting, while prayers and exorcisms play as great a rôle in the practice of the day as more reasonable measures.

Among the oldest of the States lying along the Mediterranean mutual influences had been felt; but just what one people gave to the other and received again in return is difficult in individual cases to determine. But in public sanitation none of these ancient people attained the high position of the Egyptians.

The laws of health in ancient Jewish medicine were borrowed without doubt from the Egyptians. We find the same, general and special, as among the Egyptians, and which, through the religious laws of the Jews, aimed to recover their ancient cleanliness. Among the Greeks, the influence of Asiatic culture on their development is unmistakable, and without doubt was fostered by intercourse of the Greeks with the States of Asia Minor. But the clear-thinking spirit of the Greeks brought medical science to a much higher state of development, in which public sanitation had also full share. It was Pythagoras (584-504) who first philosophically defined health and disease, regarding the continuance of the ordinary condition (of the constitution) as health—a break in the same, as disease (Diogenes, Lib. VIII).

The fact that the temples of Æsculapius and the Æsclepiades—among whom Hygeia, the daughter of Æsculapius, appears as the patron saint of the unfortunate word *hygiene*—were located on wooded heights and often in the vicinity of healing springs, can scarcely be interpreted as a recognized hygienic measure of the times. But in the laws of the ancient Grecian States we find important sanitary measures, such as the training of the youth, and care for the development and strengthening of the body, more highly regarded than among other of the ancient States, and with no others did the separation of medical practice from religious service occur so early as among the Hellenes.

In Sparta the child was regarded as the property of the State from birth on. "Children are not the special possession of their parents, but the common possession of the fatherland." A council of elders decided whether the child was sufficiently well formed and strong to be brought up, otherwise it was killed. This was done because the life of the individual who does not inherit a sound body from his parents was of no value either to himself or to the State. Mothers attended their children with much care and skill; they avoided the use of swaddling clothes so that their limbs might develop freely. This Plutarch relates from the laws of Lycurgus, who lived about 900 years before Christ. Now, after nearly 3,000 years, we can, as it seems, safely follow the same plan.

The schools of the Greeks, which were at first devoted exclusively to physical training and later developed into general educational institutions, were under the supervision of the State. Their purpose was, as Plato says, to educate the boys, to protect the health of men, and maintain the body in good condition. If to these measures, directed to the production of strong men, we add the fact that other needs of sanitation were looked after, that, according to the laws of Solon, a sufficient quantity of pure water was ordered for cities, and that a very strict ordinance against the adulteration of food was enforced by special officers, we know that we speak of a proper respect for the public care of health as it existed among the ancient Grecian States.

Medical art could not fail to make use of the many experiences which the practices of gymnasts, turners, athletes, etc., presented. The first-named, who had to prepare the salve as well as to anoint the turners before the contests of the ring, were familiar with the effects of certain sorts of gymnastics on certain disease tendencies, and familiar also with the most common fractures, wounds and dislocations. The athletes also experimented on the influence of their manner of life on the development of bodily power. Thus from among the gymnasts and athletes there grew up a group of practitioners of lower rank, in strong contrast to the specially-prepared physicians of the time, just as in our day there are masseurs, hydropaths and homeopaths, as distinguished from the regular profession.

In that time of medical activity occurred the work of the greatest physician of all times—Hippocrates. We can here well use the old proverb and say it would be "carrying owls to Athens" (coals to Newcastle) to attempt to add anything to the praise of Hippocrates. Although he was so great as physician and man, and his service to medical science, through his elementary writings, so imperishable, yet he added proportionately but little to hygiene.

I mention this especially because the opinion prevails that the books of Hippocrates on "Plagues" and his work on "Air, Water and Earth" contain matter even yet important. The titles of the above-mentioned books bear the names of the burning sanitary questions of all times—infection, air, water, earth—but their contents present us nothing that to-day is even in a measure useful—merely general weather observations which, indirectly, are of value in explaining individual diseases. For, as Hippocrates says, "if anyone thinks these things merely empty meteorological dreamings, he will find, laying aside his prejudiced opinion, that the stars have not only a little but, on the contrary, a very great influence on the medical art, for all cavities of the body and the intestines change with each season of the year." Then come descriptions of the first, second and third weather conditions, and of the constitution of the year, together with their influence on all sorts of diseases. From these, his own declarations, it is shown that Hippocrates had an entirely different idea of the significance of air, water and earth from that of our day.

We seek in air, water and earth the visible, living causes of infection, and have in part found them, while Hippocrates meant that the intestines differed with the seasons of the year and the changes of heat and cold. Rain and wind are dependent upon the position of the stars, and so, according to him, to a greater extent are the internal organs of man to which, according to the different relations of the seasons, unaccustomed changes of disease may come.

[TO BE CONCLUDED IN OUR NEXT ISSUE.]

R. D. BLACKMORE, the British novelist, is a hearty and well-preserved man of 65 years. He looks much like a typical back-country squire, and rarely appears in society, preferring to live the life of a literary recluse. He is an Oxford graduate and a lawyer.

The Beginnings of Disease.

BY JOSEPH F. EDWARDS, M.D.

[IN the spring of 1875 a very near relative of the author lay bedridden at his residence in Philadelphia, hopelessly awaiting the fatal termination of the various incurable organic diseases which a variety of physicians had fastened upon him. In the summer of 1891, this same relative is living at his country home in Montgomery County, able to do as good a day's work as any farmer thereabouts. Six years ago he was apparently doomed; to-day he is also apparently doomed—not to death, as then, but to a ripe old age of health and pleasure. Am I speaking of a miraculous cure? No; but of a typical case wherein a condition of the system that would soon have resulted in incurable organic disease was recognized in time to avert this fatal catastrophe. The fact that there are thousands and hundreds of thousands of such cases in the world—of persons who are bordering upon fatal, chronic, organic disease, whose lives could be saved were the condition recognized—has been my reason for giving this series of articles to the public.]

PART I.—GENERAL CONSIDERATIONS.

ONE of England's greatest surgeons, Mr. Jonathan Hutchinson, has written most intelligently of what he is pleased to term "The Pre-cancerous Stage of Cancer." He recognizes that there is an early period in the history of every case of cancer, a time before the system has become implicated, as it were, a time when the disease is local; and he claims that if, by operation, the local disease be removed at this time, the fatal tendency of cancer to recur will be obviated, and a cure, permanent and lasting, will result. Unfortunately, the victim of cancer in the early stages, fails to consult the surgeon; the matter is overlooked or neglected until the system has become involved; an operation is then performed, the local disease is removed; but, as the system has become implicated, the cancer recurs at the same or some other point, and the case steadily progresses from bad to worse. A cure is out of the question.

My experience and observation have taught me that what is true of cancer is also true of all chronic organic diseases.

By a chronic organic disease we understand a long continued derangement of some vital organ, as the result of which it grows gradually less and less able to perform its duty in the maintenance of life and health. The progress of chronic organic disease is usually very gradual. The departure from a normal condition is, at first, infinitesimally slight, so trifling that its results are not appreciable to the patient. Slowly the derangement increases, and now the effects of the imperfect working of the affected organ become manifest. Symptoms, evident to the senses, are present, and now the chronic disease has produced ill-health; the human machine is not perfect; one part of its mechanism is out of order; the harmonious working of an interdependent combination of organs or parts is not present; the faulty work of the diseased organ is impressing its baleful influence upon the whole system. The law of tolerance has thus far enabled the patient to withstand the *fatal* tendency of chronic disease; but, as time goes on and the organic disease becomes more and

more marked, as the affected organ becomes less and less able to do its work, as the patient becomes more and still more profoundly impressed with the results of this imperfect work, the health becomes still more impaired. The patient is now a chronic invalid beyond the possibility of cure, and as the disease still further progresses there comes a time when it is impossible for the vital spark to longer burn, and death terminates the history of organic disease. Neglected organic disease can only have one history, that which we have described, as a gradual transition from health to death.

Without going into the details of physiology, it is essential that we should know some little about the workings of the human body, that we may be able to comprehend the beginnings and the workings of disease.

The human body, as it appears to the uninitiated observer, might be well likened to the locomotive engine. That which we see is but the case or covering of the internal parts or organs, whose duty it is to labor incessantly that the phenomena of life may be manifested. As a locomotive generates within itself steam, which, in turn, imparts to its generator the power of motion, so does the human body create within itself vital force, which likewise imparts to its own creator the power of motion. The human being is endowed with motor power and, in addition, sensibility and mentality. The locomotive can generate motion only. Hence, while there is, sentimentally speaking, a vast and impassable gulf between the "*machine of man*" and the "*machine of God*," yet there are many points in common, and we have often been led to indulge the fancy that the human machine has, either intentionally or unconsciously, suggested to the mind of man the idea upon which his machinery is based. In truth, we are familiar with one form of hydraulic ram, the principle of the mechanism of which is identical with that of the human heart. Be this as it may, the fact remains that there is really a very considerable resemblance between the human being and such a machine as the locomotive engine.

Man is an aggregation of internal parts with an external covering. So is a locomotive. A locomotive has a boiler, and in this boiler by the aid of heat the power of motion is generated; but the motor agency, the steam, does not act from its position in the boiler; it is conveyed by a system of pipes to the various parts or organs of the machine, and exerts its power locally on each; that the locomotive may do its full measure of best work every part must be perfect. So man, also, has a boiler—his stomach—wherein the fuel or food is by the agency of heat (and other means) converted into *vital steam*, so to speak. The vital steam, however, does not act directly from its position in the stomach, but is carried by a series of pipes (the bloodvessels) to the various organs of the body, and exerts its influence locally thereon. That man may do his full measure of best work every part must be perfect.

We must, however, draw a distinction between vital parts, or organs that are essential to life, and those whose existence serve merely to add to the general symmetry and efficiency of our machines. Thus an eight-wheel locomotive will lose none of its motive power if two of these wheels are lost; neither will the man lose any of his vital power with the loss of a leg or an

arm ; but let both the driving rods of a locomotive break, and the machine is worthless ; it is paralyzed, it is dead, even though the boiler may retain its integrity and be as capable as ever of generating the motive power. So if the kidneys, or the liver, or the brain of a man be ruined by chronic organic disease the human machine is worthless ; it is dead, even though the stomach may retain, to a degree, the power of generating vital force.

Again, let us view a locomotive, perfect in all its parts, standing by a water-tank ready to receive the water into its boiler from which the steam for motion is to be generated. The well, full of water, is present ; the pipe from the well to the tank ; the tank itself ; the hose from the tank to the locomotive boiler ; the locomotive itself ; the fire under the boiler—everything necessary for motion, for mechanical life, so to speak, is present, yet motion occurs not. Examination reveals the fact that the pump, intended to lift the water from the well to the tank, is out of order ; the tank is empty ; the boiler cannot be filled, and the locomotive remains a dead, impassive, inert mass of metal. Again, we may view a man whose every organ is in good order, save one ; whose kidneys, liver, brain, spleen, glands of all kinds are ready and willing to work if supplied with the necessary vital force ; but his pump, his *heart*, is out of order, and as the inevitable result the integrity of the human machine is impaired.

Of course, it must be understood that we cannot make an actually accurate comparison between a locomotive and a man, but we can find sufficient points of resemblance to warrant us in hoping that, by pointing them out, by causing man to understand that there is, after all, a good deal of the machine about his body, he may be induced to give it a little more thought. So long as one regards his body and the phenomena of life as a "mysterious something" with which he has not and cannot have any intimate acquaintance, so long will he blindly leave its care and welfare to chance ; when he comes to realize that he is, after all, very much of a machine—a wonderfully marvelous machine, it is true, but a machine, nevertheless—then will he accord to this machine at least as much care as the intelligent engineer bestows upon his locomotive, and when he does, then will we all have much greater health, and premature death will be reduced to the minimum, for it is a fact that very few persons live as long as they could. Let us again view a locomotive where *one* only of the great driving rods has been broken ; the ability to move still belongs to the machine, but it is self-evident that, if made to move, the work that was previously divided between two must now be performed by one ; the engine can go ahead and draw a train of cars, and to the eye of the casual observer, who sees the train passing by, everything is all right. But the engineer in charge fully realizes how critical is the situation ; he full well knows that if he runs too fast or if he encounters a bit of rough roadbed, whereby the jarring and jolting of his engine is intensified, this second rod will be very apt to snap, and then all is over ; the engine is dead, the train comes to a standstill. So is it, precisely, with the man who has a diseased kidney.

Everybody has two kidneys, and we physicians know that one of these organs may be totally destroyed by organic disease, yet, to the ordinary

observer, the phenomena of life may go on uninterruptedly, the sound kidney, like a faithful friend, assuming and performing the work that was previously carried on by both ; but the intelligent physician thoroughly well realizes the critical condition ; he knows that only one, instead of two, kidneys stands between his patient and death ; he knows that if the billows and breakers, the jars and the jolts, the cares and the worries of life are not reduced to the minimum this one kidney will give out ; it will suddenly *snap* and all is over. He knows that comparatively good health with long life is perfectly possible to the man with only one working kidney, but he also knows that it is absolutely necessary that this weakness of the system should be recognized and provided for by appropriate treatment.

Again, at the risk of being tedious, let us view a locomotive that has been, for some years, in the charge of a somewhat reckless engineer. His idea, guiding principle has been to "work his machine for all that it is worth," to get all the speed and work out of his engine that was possible ; he has not been wont to regard his beautiful locomotive as a something almost human, viewing it merely as a mass of iron and steel, of pipes and valves, of levers and cranks, of wheels and axles, so put together that the united mass can pass over the surface of the globe at the rate of forty or fifty miles an hour. This engine has been driven and rushed, has been strained and twisted and jarred, has been jolted and burned, has been overheated and chilled, has been neglected until, suddenly, unable to stand the strain any longer, it blows up and all is over. So is it identically with the human being. The engine has not changed in a moment of time from a sound machine to one that is explosive because of defect ; the process has been a very gradual one ; the locomotive has been really passing through a process of chronic degeneration of all its parts—a process by which they have been, daily and hourly, growing less and less able to do their duty, and finally the time has come when they can no longer hold together ; a little extra strain is placed upon them, and an explosion follows. So does the man. Little by little his organs depart from their normal state, little by little do they become less and still less equal to their work ; the system, equal to almost all emergencies, endeavors to accommodate itself to this imperfect working of its organs or parts, and, in a measure, it succeeds in doing so. The various organs, so far as possible, help one another, so that the defect in the working of the organ that is primarily diseased may be, to a certain extent, compensated by the extra work of the others. In this way the balance of health may be fairly well maintained for a while. But it is an unnatural health (if we may be allowed the Hibernianism)—it is a health rather *in spite of* than *because of* the natural working of our organs. It is a health that is allowed to us because nature, in her goodness, is not anxious to strike us down. She will do all in her power to avert the fatal end. It is, so to speak, not a *healthy* health ; it is a vicarious health.

[TO BE CONTINUED.]

The Little House.*

BY M. M.

ONE of the highest medical authorities is credited with the statement, that "nine-tenths of the diseases that afflict humanity are caused by neglect to answer the calls of nature."

This state of affairs is generally admitted, but is usually attributed to individual indolence. That, doubtless, has a great deal to do with it, but should not part of the blame be laid upon the often unpleasant environments, which make us shrink as from the performance of a painful duty?

In social life, unless from absolute necessity or charity, people of refined habits do not call on those whose surroundings shock their sense of decency; but when they go to pay the calls of nature, they are often compelled to visit her in the meanest and most offensive of abodes, built for her by men's hands, for nature herself makes no such mistakes in conducting her operations. She does not always surround herself with the pomp and pride of life, but she invariably hedges herself in with the thousand decencies and the pomp of privacy.

But what do we often do? We build what is sometimes aptly termed "an outhouse," because it is placed so that the delicate-minded among its frequenters may be made keenly alive to the fact that they can be plainly seen by every passer-by and by every idle neighbor on the lookout. This tiny building is seldom weatherproof. In consequence, keen cold winds from above, below and all around find ready entrance, chill the uncovered person, frequently check the motions, and make the strong as well as the weak, the young as well as the old, very sorry, indeed, that they are so often uselessly obliged to answer the calls of nature. 'Tis true, the floor is sometimes carpeted with snow, but the feet feel that to be but cold comfort, though the door may enjoy rattling its broken hasp and creaking its loose hinges.

How often, too, is the nose and the eye offended by disregard of the Mosaic injunction, found in the twelfth, thirteenth and fourteenth verses of the twenty-third chapter of Deuteronomy! Of course this injunction was addressed to a people who had been debased by slavery, but who were being trained to fit them for their high calling as the chosen of God; but is not some such sanitary regulation needed in these times, when a natural office is often made so offensive to us by its environments that it is difficult for us to believe that "God made man a little lower than the angels," or that the human body is the temple of the Holy Ghost?

Dwellers in the aristocratic regions of a well-drained city, whose wealth enables them to surround themselves with all devices tending to a refined seclusion, may doubt all this; but sanitary inspectors, who have made a round of domiciliary visits in the suburbs, or the older, neglected parts of a large city, or to any part of a country town or village, will readily affirm as to its general truth.

* From *The Sanitarian*.

This unpardonable neglect of one of the minor decencies by the mass of the people seems to be caused partly by a feeling of false shame, and partly by an idea that it is expensive and troublesome to make any change that will improve their sanitary condition or dignify their daily lives.

The Rev. Henry Moule, of Fordington Vicarage, Dorsetshire, England, was one of the first to turn his attention to this matter. With the threefold object of improving the sanitary condition of his people, refining their habits and enriching their gardens, he invented what he called the "dry-earth closet."

"It is based on the power of clay and the decomposed organic matter found in the soil to absorb and retain all offensive odors and all fertilizing matters; and it consists, essentially, of a mechanical contrivance (attached to the ordinary seat) for measuring out and discharging into the vault or pan below a sufficient quantity of sifted dry earth to entirely cover the solid ordure and to absorb the urine.

"The discharge of earth is effected by an ordinary pull-up, similar to that used in the water-closet, or (in the self-acting apparatus) by the rising of the seat when the weight of the person is removed.

"The vault or pan under the seat is so arranged that the accumulation can be removed at pleasure.

"From the moment when the earth is discharged and the evacuation covered, all offensive exhalation entirely ceases. Under certain circumstances there may be, at times, a slight odor as of guano mixed with earth, but this is so trifling and so local, that a commode arranged on this plan may, without the least annoyance, be kept in use in any room."

The "dry earth-closet" of the philanthropic clergyman was found to work well, and was acceptable to his parishioners. One reason why it was so was because dry earth was ready to hand, or could be easily procured in a country district where labor was cheap. But where labor was dear and dry earth scarce, those who had to pay for the carting of the earth and the removal of the deodorized increment found it both expensive and troublesome.

But a modification of this dry-earth closet, the joint contrivance of an English Church clergyman and his brother, "the doctor," residents of a Canadian country town, who had heard of Moule's invention, is a good substitute, and is within the reach of all. This will be briefly described.

The vault was dug as for an ordinary closet, about fifteen feet deep, and a rough wooden shell fitted in. About four feet below the surface of this wooden shell a stout wide ledge was firmly fastened all around. Upon this ledge a substantially made wooden box was placed, just as we place a well-fitting tray into our trunks. About three feet of the back of the wooden shell was then taken out, leaving the back of the box exposed. From the center of the back of the box a square was cut out and a trap-door fitted in and hasped down.

The tiny building, on which pains, paint and inventive genius had not been spared to make it snug, comfortable, well lighted and well ventilated, was placed securely on this vault.

After stones had been imbedded in the earth at the back of the vault, to

keep it from falling upon the trap-door, two or three heavy planks were laid across the hollow close to the closet. These were first covered with a barrowful of earth and then with a heap of brushwood.

Within the closet, in the left-hand corner, a tall wooden box was placed, about two-thirds full of dry, well-sifted wood ashes. The box also contained a small long handled fire-shovel. When about six inches of the ashes had been strewn into the vault the closet was ready for use. No; not quite; for squares of suitable paper had to be cut, looped together with twine, and hung within convenient reaching distance of the right hand; also a little to the left of this pad of paper, and above the range of sight when seated, a ten-pound paper bag of the toughest texture had to be hung by a loop on a nail driven into the corner.

At first the rector thought that his guests would be "quickwitted enough to understand the arrangement," but when he found that the majority of them were, as the Scotch say, "dull in the uptak," he had to think of some plan to enforce his rules and regulations. As by word of mouth instructions would have been rather embarrassing to both sides, he tacked up explicit written orders, which must have provoked many a smile. Above the bin of sifted ashes he nailed a card which instructed "Those who use this closet must strew two shovelfuls of ashes into the vault." Above the pad of clean paper he tacked the trifty proverb: "Waste not, want not;" and above the paper bag he suspended a card bearing this warning: "All refuse paper must be put into this bag; not a scrap of clean or unclean paper must be thrown into the vault."

This had the desired effect. Some complacently united to humor their host's whim, as they called it, and others, immediately recognizing its utility and decency, took notes with a view to modifying their own closet arrangements.

Sarah, the maid of-all-work, caused a good deal of amusement in the family circle by writing her instructions in blue pencil on the front of the ash-bin. These were: "Strew two shuffefuls of ashes into the volt, but don't spill two shuffefuls onto the floor. By order of the Gurl who has to sweap up." This order was emphatically approved of by those fastidious ones who didn't have to "sweep up."

This closet opened off the woodshed, and besides being snugly weatherproof in itself was sheltered on one side by the shed and on another by a high board fence. The other two sides were screened from observation by lattice-work, outside of which evergreens were planted to give added seclusion and shade. A ventilator in the roof and two sunny little windows, screened at will from within by tiny Venetian shutters, gave ample light and currents of fresh air. For winter use, the rector's wife and daughters made "hooked" mats for floor and for foot support. These were hung up every night in the shed to air, and put back first thing in the morning. For the greater protection and comfort of invalids, an old-fashioned foot-warmer, with a handle like a basket, was always at hand ready to be filled with live coals and carried out.

The little place was always kept as exquisitely clean as the dainty, old-

fashioned drawing-room, and so vigilant was the overseeing care bestowed on every detail, that the most delicate and acute sense of smell could not detect the slightest abiding unpleasant odor. The paper bag was frequently changed, and every night the accumulated contents were burned; out of doors in the summer, and in the kitchen stove—after a strong draft had been secured—in the winter.

At stated times the deodorized mass of solid increment—in which there was not or ought not to have been any refuse paper to add useless bulk—was spaded, through the trap-door, out of the box in the upper part of the vault, into a wheelbarrow, thrown upon the garden soil, and thoroughly incorporated with it. In this cleansing-out process there was little to offend, so well had the ashes done their concealing deodorizing work.

In using this modified form of Moule's invention, it is not necessary to dig a deep vault. The rector, given to forecasting, thought that some day his property might be bought by those who preferred the old style; but his brother, the doctor, not troubling about what might be, simply fitted his well-made, four-feet-deep box, with its trap-door, into a smoothly dug hole that exactly held it, and set the closet over it. In all other respects it was a model of his brother's.

This last is within the reach of all, even those who live in other people's houses; for when they find themselves in possession of an unspeakably foul closet, they can cover up the old vault and set the well-cleaned, repaired, fumigated closet upon a vault fashioned after the doctor's plan. A stout dry-goods box, which can be bought for a trifle, answers well for this purpose, after a little "tinkering" to form a trap-door.

Of course dry earth is by far the best deodorizer and absorbent, but when it cannot be easily and cheaply procured, well-sifted wood or coal ashes—wood preferred—are a good substitute. The ashes must be kept dry. If they are not, they lose their absorbing, deodorizing powers. They must also be well sifted. If they are not, the cinders add a useless and very heavy bulk to the increment.

An ash-sifter can be made by knocking the bottom out of a shallow box, studding the edge all round with tacks, and using them to cross and recross with odd lengths of stove-pipe wire to form a sieve.

Polluted Water for Live Stock.*

BY DR. STALKER.

DURING the latter part of the summer of 1890 I had occasion to investigate a severe outbreak of disease on a farm in one of the counties of Iowa. The animals, including horses, cattle and pigs, were all affected in the same way.

* From the Bulletin of the Iowa Agricultural Experiment Station.

The local symptoms were largely confined to the throat. There was a swelling, with partial paralysis of the walls of the air passages, and painful and difficult breathing. The animals attacked, uniformly died after an illness of about two days. The disease I could not recognize as belonging to any of the well defined types with which I was acquainted. Here were horses, cattle and pigs sick and dying with disease showing the same symptoms in all.

There are few if any of the specific forms of disease that spread, like epizootics, among the widely differing species of domestic animals. I could not classify the disease, and at once set about the task of discovering, if possible, some common source of exposure. The pastures, buildings and water supply were each in turn subjected to careful scrutiny. The buildings were such as are to be found on ordinary Iowa farms, fairly comfortable and clean. I could find no clew in the quantity or quality of feed that promised to lead to a solution of the difficulty.

On investigation of the water supply, I found that most of the animals on the farm drank from a small creek that ran a zigzag course through the premises. The stream was in part supplied from a series of springs, and in ordinary seasons afforded a fair amount of water, which ran, at least, for a portion of its course, over a gravelly bed. The dry summer of 1890, with several previous ones showing an abnormally light rain-fall, had so reduced the amount of water that it had ceased to run. On making examination and conducting inquiries, I ascertained that it had been the custom on the farm to throw the carcasses of animals down the steep bluffs into the bed of the stream. I further learned that during the summer, chicken cholera had prevailed on the farm and that a large number of chickens had died and been thrown over the bank. I was also informed that hog-cholera had caused the death of a considerable number of swine, the carcasses having been treated in a similar manner. The several yards occupied by horses, cattle, pigs and barn-yard fowls were on the hillside, with abrupt drainage into the creek. In addition to this, large heaps of fermenting manure were deposited about the foot of the hill, near the edge of the stream where the animals went to drink.

A few of the animals on the farm had not had access to the stream, but had been watered from a well. None of these had shown signs of sickness, though they had been in daily contact with those that had their water from the pools in the bed of the stream, and even with some of the sick. On looking up the local geography of the neighborhood, I found that a number of farmers had built their homes along the banks of this stream, and had been accustomed to make use of it in much the same way as the farmer above referred to. Inquiry elicited the fact that on no less than four farms, situated on the banks of this stream, animals had died showing symptoms identical with those on the farm first investigated. I regarded the evidence as sufficient to make out a strong case against the impurity of the water, and gave an opinion accordingly.

The above is but a single instance out of many that have come under my observation. It is one of the most glaring, but by no means one attended with the greatest degree of loss. On another occasion where a high rate of mortality

had prevailed among the cattle running on the open prairie, I was able to trace the cause to contamination of surface water. An animal, dead from anthrax, had been thrown into a basin on the open prairie. Later the rains filled the basin with water, and about 1,000 cattle on the range had access to the pond for water supply. The result was that about ten per cent. of all the animals having access to the impure water died from anthrax. The teachings of these object-lessons are sufficiently obvious. These animals are endowed with organizations not unlike our own, and the manifest laws of being and of health can no more be violated with impunity by them than by ourselves.

The Muscles and Physical Culture.*

BY HENRY C. BOENNING, M.D.,

Lecturer on Anatomy and Surgery at the Philadelphia School of Anatomy, Demonstrator of Anatomy at the Medico-Chirurgical and Philadelphia Dental Colleges.

GENTLEMEN of the Convention: A careful study of the muscles of the body and their action is of extraordinary importance to those of you who are specially interested in physical culture.

The muscles of the human body may, for your purposes, be practically divided into two sets—outer and inner—the outer or superficial and the inner or visceral set. The outer are concerned specially in transporting the individual from place to place, such as in the action of running, jumping, striking, and the exercises of force, as the lifting of weights, swinging of Indian clubs, raising of dumbbells, and, in fact, all those movements which we see exercised daily in the gymnasium.

The visceral set of muscles are entirely concealed; they are such as specially preside over the functions of the body; such a one is the heart, and of the heart it may be said that it is the noblest and grandest muscle in the human body. Its action begins early in embryonic life and continues uninterruptedly until death. The other visceral muscles, as those which compose the structure of the stomach and intestines, are all exceedingly important to the well-being of the individual. And in training the muscular system as much care and attention—yes, and even much more care and attention—must be given to the proper physical education of the visceral or concealed muscles as to the external or superficial groups of muscles.

The question is often asked, "What is muscle?" Muscle is flesh. But when we come to examine into the structure of a muscle by means of a microscope, we find that it is composed of certain anatomical elements which differ according to the different actions of the groups of muscles. Thus if we carefully examine some of the muscular fibers taken from the biceps, a muscle under control of the will, we find they are composed of fibers about 1-250th

* Abstract of an address delivered before the annual meeting of The North American Turnerbund at Philadelphia, stenographically reported for THE ANNALS OF HYGIENE.

of an inch in diameter. These fibers at their termination are pointed and are inclosed in exceedingly delicate sheaths; but this primitive fiber is in reality composed of an infinite number of minute elements, known as the "sarcus elements." This form of fiber is peculiar to the external muscles which can be moved or exercised by the will-power of the individual and are called voluntary muscles. Thus if I WILL to strike, instantly the command is sent to the muscles which exercise that peculiar function, and the act is done. If I WILL to step, instantly the foot is thrust forward, and the act is completed. If I WILL to run, the command is sent to the muscles, which almost instantly respond, and the body is carried forward at a rapid rate of speed; but the muscles within the body, those which are found in the structure of the stomach and the intestines, are not under the control of the will. Thus I may WILL with a great determination to stop the vermicular action of the intestine or of the stomach, but entirely without avail. These muscles, then, are not under the control of the will and are called involuntary, and they differ in structure somewhat from the voluntary muscles. If we examine them we find that they are composed of minute cells, pointed at both ends; these cells have a central body called a nucleus, but do not present a striped appearance at right angles to their axes, such as is shown in the muscular fiber of the voluntary muscles. Again, if we examine the heart, which is so wonderfully under the influence of our emotions, which acts with great rapidity as the result of some sudden joy or fear or in any condition of excitement, and which at times palpitates with such remarkable force as to shake the sides of the chest, we find that it is composed of muscular fibers, which may be regarded as a combination or blending of both the voluntary and involuntary.

But do not imagine that an understanding of the mechanism of the circulation or a knowledge of the structure of the muscular fibers of the heart is all that is necessary for a full knowledge of the action of this organ. Within it are delicate secondary muscles which control the action of the valves—a highly organized nervous system, a wonderfully well-adapted mechanism—and all so perfectly co-ordinated in their movements that the volume of blood is thrown forward with just sufficient force, and the valves accurately approximated.

When under some extraordinary emotion the heart beats with great rapidity, there is still this adaptation of one part of the muscle of the heart to the other—in fact, I may truthfully say that there is more in a single heart-beat than all the philosophy of human understanding can ever fathom.

It is a matter of much importance to understand clearly what a muscle does when it acts. When a muscle acts it becomes shortened, contracts, and in man is simply the result of the change in the relation between the attached portions of the ends of the muscles. Thus the psoas muscles when they act or contract become shortened and bring the lesser trochanter of the femur nearer to the points of origin of these muscles on the vertebræ, and the fixed structures to which the muscles are attached are brought nearer each other and produce motion. Motion, then, means contraction of the muscle; contraction of the muscle means shortening of the muscle; shortening of the muscle results in certain movements of the parts to which they are attached.

Muscles when examined are found to possess certain characters, such as elasticity; if the fingers are strongly flexed or bent and the flexor muscles cease to act, the fingers regain their normal relations, not through any muscular action on the part of the extensors, but as the result of the elasticity of the muscle which has been stretched by the action of the flexors.

The muscles also possess tonicity—that is to say, they have a certain amount of inherent responsive force which acts with more or less power. There is probably no way in which to impart a vigorous tone to the muscular system more effective than a graduated series of calisthenic exercises. Where the individual is inclined to indolent and luxurious habits of life, then the tone of the muscles speedily degenerates, and they become flabby, soft and easily fatigued.

Of course you will infer from what has been said that muscles possess contractility—that is to say, there is an inherent property in muscle by which it becomes shortened under the influence of a suitable stimulus; but the contractility of the muscle cannot be indefinitely exercised, nor can the muscle remain in the state of continued action or contractility for an indefinite period. Even the most athletic of you, while holding your arm at right angles to the side of the body, for even a short time, will be impressed by a sense of great weariness, and after the lapse of one-half or three-quarters of an hour or longer it becomes impossible to sustain the member in the strained position, and it falls to the side as if paralyzed. This is due to the exhaustion of the muscular contractility. And I may say that this muscular contractility can only persist for a brief time, and may be likened to a series of explosions of muscle force. Each explosion of muscle action must be followed by a rest, and in this we have the remarkable example of the heart; for the heart, which beats sixty, seventy or eighty times per minute indefinitely, rests after each beat. Why, you will say, does the heart rest? Is it not in a state of continuous action? Certainly, but an action or revolution of the heart is an action made up of several periods. First, an action, then a dilatation, and then the rest; and without this rest the heart, like the muscle of the arm, would speedily stop exhausted.

The lesson taught to us by the heart is one which should be applied to every muscle of the body. We should not expect any muscle of the human body to act incessantly, but allow it a certain amount of rest; and in a course of physical training it is important to admit of seasons of rest, although they may be very brief; this is necessary and will restore to jaded muscles their elasticity, tone and contractility; but of what avail would the muscles of a man of the development of a Hercules be without some animating force to move them? Some men have an enormous muscular development, as, for instance, stevedores and rolling-mill hands; but simple brute force without vital energy is of but little avail; and as an example of this look at the cart-horse, while the race-horse, highly muscled, full of nervous energy, runs his race and wins.

A man's muscular development, then, is under control of his nervous energy; without it, huge muscles are comparatively of little avail, but great

muscular development plus nervous energy means an almost resistless power. Nervous energy seems to be an element capable of transmission from one individual to another. Thus it is a matter of history that Napoleon on the day of a great battle was told: "Sire, unless we retreat, our cavalry will be annihilated;" but the answer of the commander was "Forward!" Shortly after came a courier, who said: "Sire, our corps is nearly decimated; confusion is everywhere; our only course is to retreat." The answer was "Forward!" After a time came a third courier, who said: "Sire, for the love of God, let us retreat; if out of the army there shall be left a son to France, we must fly!" and with a gathering frown on his brow, Napoleon repeated, "Forward! forward!" and so wonderful and far-reaching was the electric power of his nervous energy that it touched every soldier, and before the day was done the battle of Austerlitz was added to the achievements of this most wonderful man.

Here is a phenomenon recorded in history in which nervous energy was imparted to others; and without this nervous factor acting on the muscles of his men this wonderful feat in the annals of history would never have been recorded.

But now as to the consideration of physical culture. When we understand the properties of muscles we are prepared to intelligibly address ourselves to such a training of education of the muscular system as to impart elasticity, tone, contractility and nervous energy to the system at large. There are among those who practice the art some men who are athletes, but you are not to make athletes out of the world at large, but so cultivate and develop each individual as to make him stronger and happier by conferring upon him health and strength to confront every condition in life. Do not develop such muscles in the individual only as are already sufficiently large and vigorous, but proceed to cultivate such as are less vigorous; do not attempt to exercise an enfeebled patient in an outrageous manner by the lifting of heavy weights or violent exercise on the parallel bars; such treatment might mean further enfeeblement, possibly death. When an individual is presented to you for treatment, one who has deficient muscles, and you desire to improve them in every way, and they are not able to exercise the entire body, or groups of muscles or a single muscle, then begin by taking a single bundle of muscles, then a muscle, then groups of muscles, and then the body at large.

Concerning the muscles of the body, I may say that wherever there are flexors there are antagonizing extensors. All groups of muscles have their antagonizing sets: wherever there is an abductor there is an antagonizing adductor—a flexor, an antagonizing extensor. If the muscle is much enfeebled, you may cause it to act by the electric current, but first take a single bundle of muscular fibers, then a single muscle, and then groups of muscles. The same may be accomplished by percussion and massage; and by following this plan you cannot fail to have a success that will entirely accomplish the purpose which you designed. When we examine into the groups of muscles in the entire body we see that they are divisible into those of the head, trunk and extremities. The muscles of the face are called the mask muscles. If they

do not respond to the motions of the individual, his face becomes a blank and stoical. The muscles of the back of the neck, called the extensors of the head, are very active in maintaining the head erect.

Muscles act from fixed points, which are generally from those attachments nearest the spine, but the fixed point of a muscle depends upon circumstances. Thus at Paris recently while the head of a criminal was held in the block his body was wrenched loose from its fastenings, and by contraction of the extensor muscles of the head curved high into the air, but only for an instant, for the gleaming blade struck off the head, and the body fell quivering upon the scaffold.

In this case by fixation of the head the fixed points of the extensor muscles of the head were removed. If the foot is caught in the frog of a switch it becomes a fixed point from which the muscles of the leg act.

The superficial muscles of the back and abdomen are of the greatest importance to the individual. Thus the muscles of the back enable them to stand erect, bend, etc., and execute every motion to which the trunk is liable. The abdominal muscles form the walls of the abdomen; they are the structures which carry the weight of the contents of the abdominal cavity. How important it is, therefore, that these muscles should be powerfully developed and strong to act! If they are in any way bound down by constricting garments, enfeeblement of the muscles must ensue, and enfeeblement of the abdominal muscles in women means serious embarrassment in the functions of childbirth. The pendulous, flabby abdomen presented by many women after the birth of a child is largely due to the enfeebled state of the abdominal muscles and their imperfect involution; and it is not extravagant to say that such enfeeblement is the result of corset-wearing.

I do not wish to appear as a champion of dress-reform in women; but while I have touched upon this subject, I would like to say that, from my personal experience in cases of this class, there is nothing which has caused so much trouble to women at large than the wearing of tight articles of dress, such as the corset. The result of their use means enfeeblement of the abdominal muscles. If, however, you suggest to them to do away with this destructive harness, they will probably tell you that such a thing would be utterly impossible, as they would collapse, that they must have a support, and it would be impossible to stand in an upright position without them. If you will carefully show them how the elasticity of the muscles is sufficient to maintain them in erect positions and sufficient to carry the contents of the abdominal cavity, they will often not only immediately throw away their unwise articles of dress, but at the same time accept treatment by massage to remedy the nervous troubles as the result of this cause. Excessive lacing is responsible for the high costal type of respiration seen in women. We find among the aboriginies that man and woman are not different in the type of respiration—both breathe alike—but where the abdomen is fixed in a cuirass, respiration must be necessarily embarrassed.

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EDITORIAL.

Ice Cream, Watermelon and the Like.

IN a chemical laboratory recently, we were watching the process of conversion of one article into another, and as we saw the spirit-lamp burning under the retort, we thought how essential is heat to almost all chemical action. At this moment a lump of ice was thrown into the retort, and at once all chemical change ceased. How like unto what we see here, we reflected, is that which occurs in the human retort, the stomach, where the heat necessary for digestion is dissipated by suddenly precipitating into the partially-digested contents of the stomach a lot of ice cream, or of *ice-cold* watermelon, or any other heat-dispelling article.

We recognize and admit that good ice cream is a most nutritious article, and we cannot say anything against its use at the proper time; but the proper time is not when we want the stomach to be warm that digestion may take place. It is not right that we should finish a warm meal, or, indeed, any kind of a meal, with an *ice-cold* dessert of any kind. If we will eat ice cream one hour before, or three hours after a meal, it will do us good; if we use it as a dessert, it will be very unwholesome.

Dr. Shakespeare's Report on Cholera.

DURING the past month we have been favored with a copy of the official report of Dr. E. O. Shakespeare who, it will be remembered, was sent out as the official commissioner of the United States during the last epidemic of cholera in Europe. Knowing Dr. Shakespeare as we did, we were prepared for a very full and exhaustive investigation of his subject, but, considering the comparatively short time that was allotted to him in which to make his observations, we hardly expected such a vast amount of valuable matter as that which we find in this huge volume before us. We are almost overwhelmed with the magnitude of this "report," and hardly know where to commence to commend its numerous valuable suggestions.

Replete, as it is, with most important information, it seems to us that one of the most practically valuable points in this report is the paragraph wherein Dr. Shakespeare tells us that "The history of the invasions of Europe by epidemics of cholera has shown that these visitations have, *without exception*, been traced back to India as their point of origin, and that they have followed the course of trade, of travelers or of armies moving either by land or by sea."

From this forceful and unequivocal presentation we can learn with conviction that India is the hot-bed in which the seeds of this frightful disease are kept continually alive, in which they are multiplied, and from which they are disseminated to the remotest portions of the globe. Such being the case, it must be evident that, to effectually prevent the ravages of the disease, we should destroy the hot-bed, by so modifying the conditions that exist in India, that conditions favorable for the continued existence of the disease will not be found. If cholera confined its ravages to India, then might we relegate the sanitary supervision of the country to the people thereof; but since the disease is international in its fatal influence, then does it seem to us that the whole civilized world has a perfect right to insist that the conditions of India shall be so modified that it will no longer offer a breeding place for this disease.

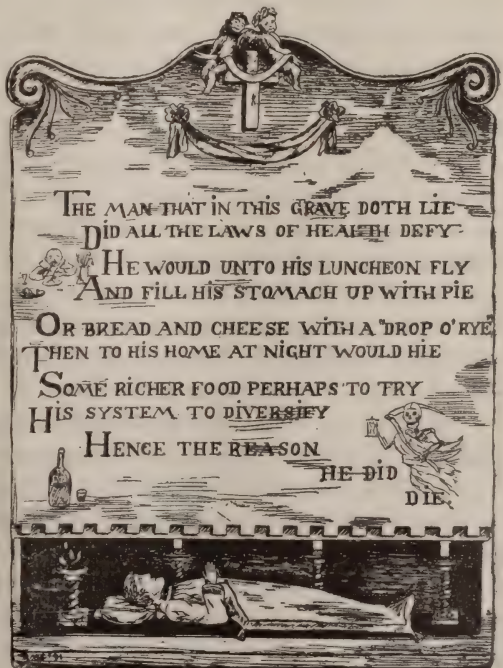
We heartily congratulate Dr. Shakespeare upon the completion of this magnificent "report," which will go down the ages to come as a splendid memorial to his industry and skill.

Railway Lunches.

FOR quite a time, one winter, we were accustomed to take our lunch at the excellent restaurant in the Broad Street Station. That we might make some observations that we had in mind, we patronized the "lunch counter" rather than the dining-room, for at this counter we would see those who would come hurriedly from an arriving train and have only a limited time in which to eat, before their train would again move on, and it was this class that we wished to observe.

After a while, we could almost tell, before we heard him speak, what kind of a lunch a man would order.

The door would be violently pushed open, and in would rush a man who would be thin and nervous, with a sallow complexion; a cross, anxious, worried expression on his face, hollow eyes, prominent cheek bones, ears and jaw, a man upon whose bones there was but little fat, a man who looked every inch the dyspeptic. Hurrying to the counter, he would call out, "Give me a piece of *pie* and some *ice cream*," or "pie and a cup of tea," or "pie and milk," or "pie and cheese," or "lobster-salad,"



“chicken-salad,” or “fried oysters;” something indigestible and of but little value as a nutrient.

Following him would come a jolly, round-faced, well-nourished-looking man, whose self-contented expression of countenance would furnish ample evidence that he was equally at peace with himself and the rest of the world.

— Let us listen for his order: “A plate of soup and bread and butter,” or “some roast beef and potatoes,” or “some stewed oysters,” or “a glass of milk and bread and butter,” or some equally digestible and nourishing article. By actual count, we noted that it did not consume any more time for the happy man to eat his plate of soup or his cut of beef than it did for the dyspeptic to consume his pie and ice cream. The lunch over, the man of beef or soup returned to his train for a comfortable nap as he was borne onward to his destination; the man of pie to dyspeptic musings upon the worthlessness of life and to scowling discontent with his fellow-passengers. Exaggerated as it may seem to say so, it was none the less a fact that the favorite diet, as evidenced by the instinctive lunch order, when in a hurry, had left its mark upon the countenance.

But the wisest person of all has yet to be noted; he would come in and order a glass of milk, which he would quietly drink, then he would buy a chicken sandwich which he would take into the train with him and eat at his leisure.

One of the most satisfactory breakfasts we have had for a long time (satisfactory, because of the self-knowledge that we had eaten it *exactly* as we should have done) consisted of a large piece of bread and a large piece of mild ginger-cake eaten on a railroad train, the eating of which consumed about three-quarters of an hour. We were required, unexpectedly, to leave home at a very early hour in the morning, so that regular breakfast could not be prepared. A piece of bread and a piece of ginger-cake were put into the sachel, and off we started. Having no liquid with which this frugal meal could be washed down, we were particularly careful to thoroughly chew each mouthful and to have it thoroughly mixed with saliva, reduced to a watery mixture, before we allowed it to pass on into the stomach. As we have said, we were about forty-five minutes eating an amount that would have been ordinarily eaten in less than ten; but, when through, we felt satisfied that we were getting out of this little meal every particle of nutriment that was in it.

It would be well if people would understand that it is not the amount eaten that will gauge the amount of nourishment to the system, but the amount that is *properly* eaten, that is masticated thoroughly before it is allowed to enter the stomach. There is much more nourishment with infinitely less misery in a small piece of beef *well chewed* than in a whole pie that is *bolted*. If you must eat pie, choose a time when you have plenty of leisure to thoroughly chew the pastry, but do not, as you value your comfort, let this be your main dish in a hasty railway lunch.

THE Empress Carlotta has recovered her reason, but her whole life, since the time, twenty-five years ago, when her husband was shot, has been blank, of which no memory lingers.

The International Congress of Hygiene.

CERTAINLY, in England, at least, hygiene is the "*fad*." The International Congress of Hygiene that recently convened in London was presided over by the Prince of Wales, while the Queen held a special reception for the delegates. Delegates from all portions of the civilized world were present, and the attendance at the different sessions of the congress was satisfactorily large, much greater, even, than there was any reason to anticipate that it would be.

The report of this congress, which we elsewhere publish, is from the *Medical Record*, and we commend its most careful perusal.

Back Numbers Wanted.

To Our Subscribers :

There has been such a steady demand for the back numbers of THE ANNALS OF HYGIENE from the new subscribers who, appreciating the practical information given in its pages, wish to get it from the very beginning, that our files have run low, and in some cases are completely exhausted. Therefore, that none may be disappointed, we are prepared to buy back a limited number at one-third advance on price paid us, or twenty-five cents per copy ; but in all cases we desire a postal card sent us, notifying us of issue offered for sale, and will not accept any sent us without such notification, and an order from us to send.

The issues desired are: September, December, 1884 ; September, October, November, 1886 ; February, 1887 ; November, 1889 ; January, September, 1890.

A Sanitary Exhibit at the Columbian Exposition.

A sanitary exhibit at the World's Fair, if properly made, will advance the science to a very marked degree. A proper display of sanitary appliances, those relating to lighting, heating, plumbing and drainage, ventilation, water-works and sewerage, would be an object-lesson in domestic hygiene more important and practical than lectures, reports, statistics and the usual modes of imparting knowledge. In the first place, an adequate display of these appliances at such an exposition would attach to them an importance partaking of the nature of the great exhibition made by the nations of the earth. It would also be the means of giving the visitors an opportunity to see the latest and most approved methods of making a home healthful. It can be taken for granted that the best would be on exhibition and in working order, so that their merits could be plainly understood. An important lesson in sanitary plumbing and drainage would be given in the most direct and impressive manner possible. Appliances necessary for the proper sanitation of buildings would be on exhibition, of which the general public are unfamiliar and do not appreciate their worth. There can no other exhibition be made of so much importance as this, or as closely related to man's highest welfare.—*Sanitary News*.

NOTES AND COMMENTS.

What Constitutes Total Helplessness?

Total helplessness, according to a pension bill introduced into the United States Senate during the last session of Congress, is caused by the loss of a leg or arm so close to the hip or shoulder that an artificial limb cannot be worn.

Brazil and Scrofula.

It is said that Brazil has a law for the medical examination of persons about to marry to determine their fitness. It is a sanitary measure that is found to be necessary to stop the transmission of scrofula, which at one time threatened to destroy the strength of the people.

Incandescent Electric Light.

All incandescent electric lights should be shaded for desk-workers. Since they have been generally introduced, it has been found that where the rays fall direct upon the eyes of newspaper-writers and desk-workers, there has been a great increase of complaints of dimness of sight and inflammatory affections of the eyes.

Cooking Eggs.

Pour boiling water over the egg (in its shell) and let it stand in the water for five minutes; that is, set the vessel containing the egg and the hot water where the latter will keep warm but will not boil. At the end of five minutes, the egg will be nearly as smooth as custard, and its flavor something delicious, provided it was good and fresh to begin with.

One Kind of Remedy for Skin Disease.

A new remedy for skin disease is a continual bath, the patient eating, drinking and sleeping there until cured. One patient has been kept in such a bath for 385 days. He is tied up always at night to prevent him from slipping so as to be drowned. The palms and soles become much shrivelled, but the rest of the skin is unchanged. The water is kept at 100° F.

The Infection of Dwellings.

Before a recent congress for the study of tuberculosis in Paris, M. Olivier reported several cases in which healthy individuals became tuberculous after taking up their residence in apartments previously occupied by tuberculous persons. He thought the contagiousness of tuberculosis, and the great necessity of thorough disinfection of dwellings lately inhabited by the subjects of phthisis, were points upon which too little insistence was placed by physicians and the sanitary authorities.

How to Give Castor Oil.

The *Dixie Doctor* says to administer castor oil pleasantly, thoroughly mix the dose with four times as much hot milk, shaking the two together in a bottle which they do not more than half fill. When taken in this way the activity of the oil seems to be increased, and being rendered very limpid by the hot milk its oily nature is not perceived. It is scarcely to be distinguished from hot milk.

The Tripod of Longevity.

The *New York Medical Journal* says in a recent issue: The tripod of longevity may be said to be a sound stomach, a warm domicile, and unruffled temper; these three parts working well together will sustain the traveler wonderfully during the last stadium of life's journey. Inherited vigor must, of course, be taken into the account, as also the favoring circumstances of country life and the ability to employ the mind helpfully and cheerfully as age advances.

Smoothing out Wrinkles.

The *Medical Press* is responsible for the statement that a curious application has been made of the absorbable properties of lanolin in the treatment of wrinkles. When well rubbed in lanolin passes directly into the skin and acts as a nutrient to the subjacent tissues, with the effect of smoothing out the folds produced by the attenuation of these structures incidental to age. Several elderly ladies who were induced to give this method of treatment a trial are said to have been delighted with the result.

The Climate of Western Washington.

An observer of Port Blakely, Wash., reports that the hottest day in that place, in a period of fourteen years, was June 6, 1878, when the temperature record was as follows: Morning, 62°; noon, 94°; evening, 73°. Since then on only three has a record of 92° been made. The lowest temperature day recorded was on the morning of January 15, 1888, 3° above zero, the next lowest being on February 11, 1884, 7° above zero. There has not been sufficient frost in the fourteen years to destroy potatoes left in the ground where they grew.

\$20,000 for Some "Yankee."

As it would seem that nothing is impossible to an enterprising "Yankee" who has his "*mind made up*," we would note for the especial benefit of such that an old lady in France, believing it possible that some day communication may be established between the earth and the planet Mars, died recently, and in her will bequeathed a legacy of 100,000 francs to the scientist who first shall successfully accomplish the feat. It must be done within ten years, however, as the money is payable only within that period, during which it is to be held in trust by the French Institute.

The Fatal Freaks of a Drunken Bear.

This time it was a bear with *four* legs, but he was a *tame* bear until his passions became inflamed with liquor. It was in a Russian village that the servants of a wealthy man, who owned a tame bear, taught this poor brute to drink whisky. The bear, harmless enough to be allowed to wander at will, entered a tavern and staved in a keg of whisky.

The owner tried to prevent the bear from getting at the whisky, and the bear set upon him and killed him and three children. So we see that too much "fire-water" will make beasts of bears, as it does of men.

Science as an Aid to Farming.

The chinch bug is an awful little pest that will, sometimes, annihilate whole fields of grain by sucking the sap from the growing stalk. Prof. E. A. Snow, of the University of Kansas, has succeeded in inoculating some of these little fellows in his laboratory with a fatal and infectious disease (says the *Bacteriological World*), and he then turns them loose in the field. The infection spreads rapidly, and the field is soon rid of the pests. Fields thus cleared of them last year are not affected this year. This is another triumph of science over a formidable enemy of the farms of the great West. A similar method has been tried with the army-worm, and with partial success.

Hygienic Vaccination.

While we are not among those who think that vaccination should be tabooed because of its liability to convey disease, yet we think that due caution should be employed in the operation. Hence we are prepared to agree with the Paris Academy of Medicine, when, recognizing the dangers of infection by tainted lancet or needle during vaccination, they express a desire that a separate instrument should be used for each person. Dr. Mareschal, surgeon-major in the French army, proposes to use an ordinary steel pen, specially pointed, which may either be held between the fingers or put into a holder. The cost being very moderate, each operation may be performed with a fresh pen.

The Water Supply of New York City.

Philadelphia no longer enjoys the unenviable distinction of being the only large city whose inhabitants are compelled to drink liquid sewage. New York is now falling into line, for the chemist to the Health Board has found, in a number of recent analyses of the water supplied to that city, traces of nitrites, presumptive evidence of sewage contamination. And unfortunately an inspection of the Croton water-shed bears out this evidence of contamination furnished by chemical analysis (says the *Medical Record*). Drains from slaughter-houses, factories, barns, cemeteries and dwelling-houses are found emptying into the streams that feed the water supply, and the wonder only is that a dangerously foul condition has not been reached before.

Cremation.

A very crowded meeting assembled to hear the discussion on cremation, at the International Congress of Hygiene in London. It ended by the passing, by a very large and crowded audience, of a resolution proposed by Sir Henry Thompson, and seconded by Mr. Ernest Hart, editor of the *British Medical Journal*, "That the cremation of the dead is a rational and hygienic process, and one which is especially called for where death occurs from contagious disease." This was carried with only four dissentients.

A Strike which Deserves Sympathy.

As a rule, "strikes" are unfortunate affairs, and usually result most disastrously to the strikers. Being generally for an increase of wages, and such demand being often untimely, the strikers do not receive popular sympathy. But, recently, in New Brunswick, N. J., there was a "strike" that should enlist the sympathy of every man worthy of the name of man. In the case in question, it is reported that fifty employees of a rubber shoe works struck because they were not *allowed proper ventilation*. Good; we propose "*three cheers and a rousing big tiger*" for these enlightened and progressive workers, and we earnestly, most earnestly, trust that, if their complaint be well founded, their strike will be successful.

The Medical Aspects of Marriage.

It is only right that medical men should have something to say upon the expediency of a marriage taking place between two persons in particular instances, but it is altogether doubtful whether, having pointed out the undesirable nature of a union upon physiological or pathological grounds, this advice would be adopted. There is no such thing as "future" with persons who have newly plighted their troth; they are too much absorbed in contemplating and reveling in the present. "The things that are" afford them all the satisfaction that they require without, in their opinion, demanding any consideration with regard to the things that might be. This state of affairs may be the natural outcome of those irresistible forces which are so egregiously prominent in the causation of marriages; but, however this may be, the fact remains that the union of two persons is oftentimes inexpedient upon medical grounds. For example, no marriage should take place between persons having the same hereditary tendency to disease, a prohibition which is especially important in contemplated marriages between relatives. Again, it is perhaps very doubtful whether a hapless person, the subject of constitutional syphilis, should marry, or one with a well-marked tubercular taint, or one in whose family insanity is a distinguishing feature. Common experience, however, very fairly indicates that none of these conditions would be likely to interfere with the "understanding" arrived at by two persons who had determined to enter the sphere of matrimony, and medical men have, therefore, very little chance of pointing out deficiencies in such arrangements, even when these are palpable.—*Medical Press*.

The Prevention of Blindness.

The Maine Legislature has passed a law providing that, "Should one or both eyes of an infant become reddened or inflamed at any time within four weeks after its birth, it shall be the duty of the midwife, nurse or person having charge of said infant, to report the condition of the eyes at once to some legally qualified practitioner of medicine in the city, town or district in which the parents of the child reside."

If this law were universal we would find ourselves much less taxed to support institutions for the blind.

Profits in Food Products.

It is frequently asserted that manufacturers of prepared foods reap enormous harvests. An instance of the truth of this statement is given in a recent issue of the *Medical Press*, which quotes the following figures in regard to the Liebig's Extract of Meat Company, of London. The annual production of extracts was not less than \$1,200,000 worth, and the shareholders received a 17.5 per cent. dividend for the year 1890. The *Press* states further that these articles of nutriment bearing the name of Liebig have an exceptionally large consumption in Great Britain, and constitute an important item in the dietetics of the sick-room and the nursery.

The Tomato.

We are frequently asked as to the healthfulness of the tomato; hence we are pleased to note that the *Medical Mirror* considers it one of the most excellent vegetables that we have. It is but a few years since it was admitted into the realm of dietetics, except for feeding to the brute creation. It is an American vegetable, and the taste for it is a cultivated one. It has anti-scorbutic properties, and should form a liberal part of the diet of all children, and they should be taught to eat it freely. There are few cases where a well-made tomato soup will not be agreeable and acceptable to the invalid, and at the same time it will do good service in the direction of stimulating the secretions and urging forward a torpid liver.

Consumption of Spirits.

Census Bulletin 22, devoted to statistics concerning the quantities of spirits consumed in the arts, manufactures and medicine, gives these figures. During the year ending December 31, 1889, wholesale druggists and manufacturers disposed of 5,425,791 proof gallons of alcohol, 1,334,633 gallons of cologne spirit, 54,000,737 gallons of high wines, 870,282 gallons of whisky, 100,482 gallons of brandy, 87,378 gallons of rum, 84,937 gallons of gin, an aggregate of 7,966,640 gallons.

During the same period apothecaries disposed of 1,289,269 gallons of alcohol, 114,641 gallons of cologne spirit, 20,372 gallons of high wine, 1,085,396 gallons of whisky, 129,793 gallons of brandy, 101,362 gallons of rum, 136,579 gallons of gin, a gross total of 2,907,412 gallons.

Vaccination and Consumption.

There seems to be an idea in some directions that there is a species of antagonism between vaccination and consumption. Landouzy has declared that children that have been vaccinated are less liable to consumption than those who have not had the benefit of vaccination, and now Dochmann comes with evidence that marked improvement sometimes follows in consumptive patients after vaccination.

Of our own knowledge we cannot speak on this subject, but we would suggest to our professional readers that it would be interesting if they would look into the question of vaccination among their consumptive patients. We will be glad to publish the results.

The Unselfish Physician.

"We may brave the pestilence when all others flee (said the late Dr. Moses Gunn, of Chicago); we may remain firm at our posts when death is more imminent than it ever was on the battlefield; but who sings our praise? Does the world know who the physicians were who fell at Norfolk when yellow fever depopulated that town? Does it know who rushed in to fill their places? and of those who survived, can it designate one? Did they survive to receive fame? Yet those men were braver than the bravest military leader, for theirs was a bravery unsupported by excitement or by the hope of fame. No, there are none so poor as to do us reverence. And, thank God, there are few of us so unsophisticated as to expect it."

Influence of Diet on Hair Growth.

In the *British Medical Journal* Dr. E. C. Mapother says: Several cases of shedding of hair after influenza have confirmed my opinion that diet has much to do with the production and with the cure of baldness. Hair contains five per cent. of sulphur, and its ash twenty per cent. of silicon and ten per cent. of iron and manganese. Solutions of beef, or rather of part of it, starchy mixtures, and even milk . . . cannot supply these elements, and atrophy at the root and falling of hair result. The color and strength of hair in young mammals are not attained so long as milk is their sole food. . . . The foods which most abundantly contain the above-named elements are the various albuminoids and the oat, the ash of that grain yielding twenty-two per cent. of silicon. With care these foods are admissible in the course of febrile diseases. . . . I have often found a dietary largely composed of oatmeal and brown bread greatly promote the growth of hair, especially when the baldness was preceded by constipation. Those races of men who consume most meat are the most hirsute (hairy). . . . I have always found that friction of the scalp with pomades and lotions dislodges many hairs which might otherwise remain, and that cold or tepid baths with salt added and rough rubbing of the rest of the body will flush the capillaries of the affected part more effectually. Besides, when pomades are used, frequent washing becomes necessary, and this is conducive to baldness.

Liquor at Banquets.

Illustrative of the dangers of furnishing alcohol in large amounts to large gatherings, was the banquet given by Berlin to the Tenth International Medical Congress. The correspondent of the *Philadelphia Medical and Surgical Reporter* says: I regret to say that the bigger the man, the more he was inebriated. Upon a professor whose name is a household word over the medical world, artificial respiration was practiced for almost an hour. Another professor, who has revolutionized one of the most important of medical branches, had a bad cut in his head from a fall. A French physician renowned for fighting temperance was too drunk to spell his own name. Two men were seen hugging each other who are known as irreconcilable antagonists in science, one a leader of German bacteriologists, the other a Paris professor who does not believe in bacilli.

Old Shoes.

The people of the United States spend annually \$450,000,000 for shoes. Think what an enormous number of shoes this fabulous amount of money represents. Have you ever thought what becomes of all these shoes when they are too old and worn to be of any further use as shoes? Of late the manufacture of an artificial leather wall-covering, selling under a high-sounding name, makes a market for all the worn-out boots and shoes of the American people, so that in its revised form the discarded footwear of the most wretched of earth's children may look down for years upon the scenes of splendor such as the forlorn wearer saw not, even in dreams.

There are other uses as well, including the manufacture of buttons, combs, knife-handles and other articles which are interesting, but of which the public knows little. Carriage-makers, bookbinders and picture-frame-makers consume this artificial leather to a certain extent for their cheaper grades of work.

Dosing the School Girl.

We recently encountered a patent medicine advertisement (published by a New England woman whose advertisements are seen everywhere) that contained such horribly bad advice that we must go out of our way to contradict it. The advertisement has a picture of a school-room, one of the girl pupils in which has been overcome by the burden of her tasks and drops her aching head on the desk. The text of the advertisement goes on to say that the custom in such cases is to take the girl temporarily from school, but that such a practice is wrong, the proper course being to dose her with this particular patent medicine. If this woman has the knowledge which she ought to have, and if she is favored with a conscience, we would consider it a very hazardous risk to insure her happiness in the next world. What would you do if your costly horse should become exhausted by overwork? Rest him, of course. Well, you should do at least as much for your child; it would be bad policy *to dose either girl or horse*.

The Ventilation of Churches.

We have heard so many persons complain of a fluttering and palpitation of the heart whenever they attend service in the church that we have come to think that there must be a deficiency of oxygen in the atmosphere of most churches.

Particularly do we hear this complaint among Catholics, whose churches are always so crowded. We have been led to think that, owing to the large number of persons who are so frequently in these buildings, the oxygen must be consumed so thoroughly that, unless the means for ventilation be unusually good, it is impossible for a sufficient amount of it to be restored to the atmosphere. This palpitation is, usually, an evidence of deficient oxygen, as it means that the heart is called upon to act more frequently in order that it may satisfy the demand of the tissues of the body for this gas, there being so comparatively little of it in the atmosphere. As a remedy, we have thought that it would be well, in addition to the ordinary ventilation, to provide means for the generation and dissemination of oxygen into the atmosphere of our churches. It would not be costly, and it would prove a great aid to religion, in so far as it would brighten the intellects, increase the comfort of and remove many distractions from the worshippers.

Advice to a Young Physician.

The following letter, written eighty years ago by Dr. Benjamin Rush, applies so well to present conditions and is so full of sound advice that we publish it here (says the *Medical Record*):

“PHILADELPHIA, April 21, 1812.

“DEAR SIR: The facility with which a medical education is acquired in our country has multiplied physicians to such a degree that I do not know of a spot in the United States in which you would fix yourself with more advantage than in the one you now occupy. Competition and slow pay are now the conditions of a medical life everywhere. My advice to you is to remain where you are; you will grow with the growth of the settlement. Purchase upon credit, if possible, a small farm; a little debt will make you industrious and furnish you with an excuse to send in your bills as soon as your patients recover. Employ the leisure which a healthy season will give you in agricultural labors; the more you will obtain in this way the more independent you will be of your patients, and, of course, the more you will be courted by them. Happiness does not consist in wealth. A competence, books, alternate labor and ease, to use the words of the poet Thomson, a good wife, a few friends, vicinity to a church, and conduct regulated by the principles of the Gospel, constitute the sum total of all the happiness this world is capable of giving, and these may all be possessed and enjoyed in your present situation.

“From, dear Doctor,

“Yours truly and affectionately,

“BENJ. RUSH.

“TO DR. PETRIKEN.”

The Health of the American Girl.

I have endeavored to show (says Dr. G. J. Engelmann, in the *Annals of Gynecology*) that the health of the American girl is threatened and impaired by causes more or less avoidable, as they are due to our method of life, our methods of training and education; that the physique of this girl, most favorably situated, amid auspicious possibilities, is imperfect; her brain overworked, her nerve-power exhausted, her function impaired, and reproduction engendered, all by reason of the susceptibility of her peculiar organization, and the increased impressionability of the sensitive system during the years of development, in which it is subjected to the most severe strain.

The remedy is: Attention to woman's peculiar organization and the cyclical waves of her dominant function; or, in other words, harmonious development and occupation of nerve and muscle; diminished brain work and nerve stimulation, with increased and co-ordinate physical exercise; increased protection and diminished compression of dress; self-knowledge and individual care during periods of heightened susceptibility. An harmonious co-education of mind and body should be approximated, with coincident maintenance of proper hygienic conditions. The nerve and emotion strain of class competition must be abolished; the stress of constant work, the train of thought, and the routine of regulation must be broken: mind and heart should be educated rather than memory, the nerve strain varied by healthful pleasures and physical exercise in the open air, all relieved more or less, according to individual necessities.

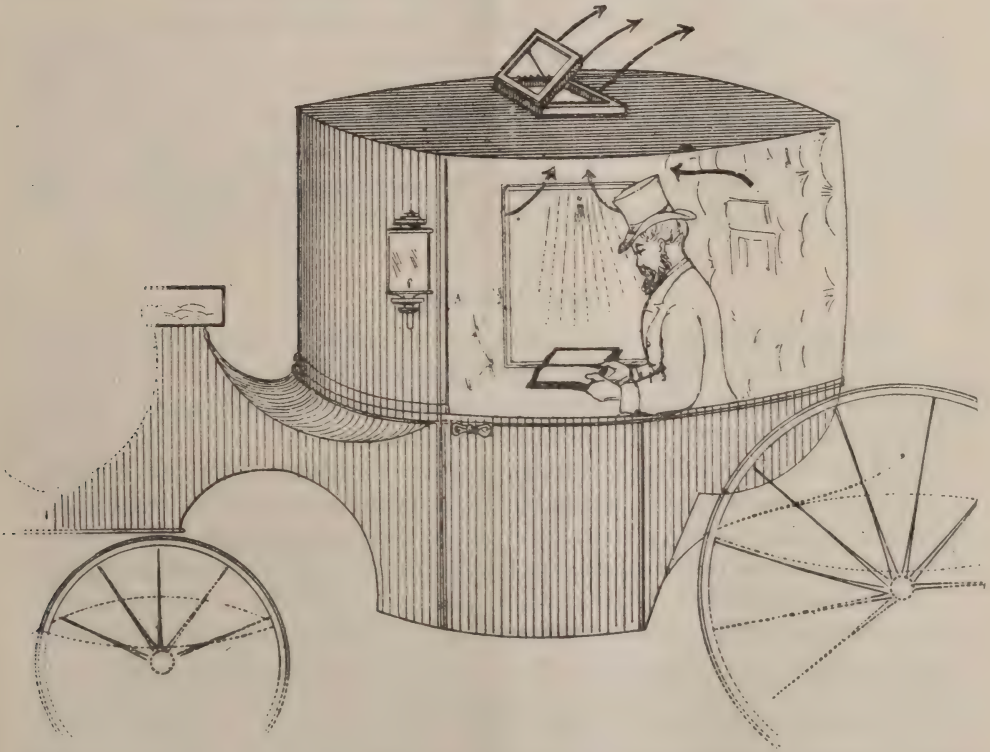
A Large Fee.

The largest fee I ever got, writes Dr. William W. Parker in the *Virginia Medical Monthly*, was from an Irish girl, 8 years old, whose sister, 16 years old, was lying ill with pneumonia. It was many years ago. She was the daughter of a poor widow in the suburbs. There were two smaller children in the family. It was by the labor of this 16-year-old daughter that the family got bread, and I saw her value to the household. I told the mother my fears, which it seems the 8-year-old child overheard, and dreadful alarm filled her breast. She waited on the sick sister with the greatest tenderness, and the smaller children were kept quiet and orderly. I promised the mother I would call again late at night. It was dark and rainy. Fears and forebodings increased with the surrounding gloom. The 8-year-old girl could not stay in the house, but in spite of the cold remained outdoors watching for my coming. When in the distance she heard the sound of horses' feet, her heart swelled with hope and fear, but when, peering through the darkness, she caught sight of me, she exclaimed, with an emphasis and heartfelt earnestness that thrilled me through and through, and which I shall never forget, "Thank God, here comes the doctor!"—a prayer of thanksgiving that went as straight to heaven as that of sainted prophet or priest, and I felt that even my name had been mentioned and honored in the courts of heaven. It may be, too, the prayer of that little orphan girl has turned aside the dart of death uplifted against some dear one of my own household.

Ventilation of Physicians' Carriages.

Because he has derived so much comfort himself from the following device, Mr. T. Pridgin Teale, of Leeds, England, earnestly recommends it to his fellow-physicians.

The physician spends so much of his time inside of his carriage, and does so much reading while driving about, that it is very important that he should secure as perfect ventilation and light as possible. The size of the window in the roof should be about 18 by 8 inches, and it should be placed vertically over the point where one holds his book, that is, over the knees. The elevation is secured by a small rack and prop. If, during rainy weather, the



window be fixed *closely down*, the vibration sucks in water and causes dripping. This is avoided if a hook-fastener fixes it one-sixth of an inch open. Traveling one frosty day, and observing the windows of other carriages dull with "steam" while his own were clear, Mr. Teale closed the roof ventilator, and in *five minutes* the whole of the windows were covered with steam. The ventilator was then opened, and in five minutes more three-fourths of the windows were clear. Mr. Teale claims that the air which enters through the imperceptible crevices around the doors and windows escapes in a full current, as is shown by a lighted match, by the ventilator thus rapidly changing the air without a perceptible draught.

Test for Drinking Water.

Professor Angell, of Michigan University, gives the following simple test for drinking water which may be of use to the householder, whether in town or country: "Dissolve half a teaspoonful of the purest white sugar in a pint bottle quite full of the water to be tested, and stop the bottle carefully; then expose it to daylight and to a temperature up to 70° F." If examined after a day or two, when held against something black, any organic matter present in the water will appear in the form of floating specks.

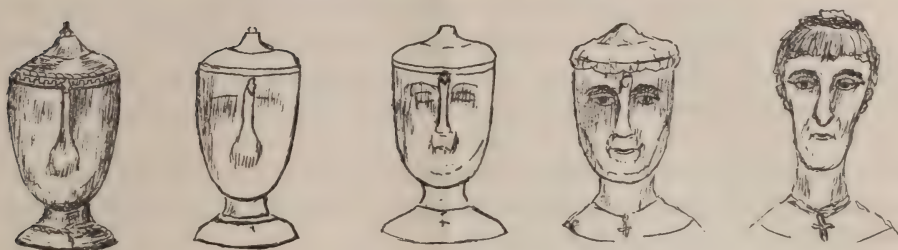
A System to Defraud Insurance Companies.

There is said to be a gang in Paris, the members of which thrive at the expense of the insurance companies. Their plans are simple. A man lets himself be run over. The driver is his accomplice. The authorities are appealed to. An insurance inspector reports on the case, making the slight injury sustained appear a very serious one. The profits are divided up. As occurrences like this became frequent, suspicion began to be aroused. The result ended in the imprisonment of sixty-five members of the gang.

Sicilian Pigs.

An English consular report from the island of Sicily comes to the rescue of the reputation of an animal much vilified for conditions of life into which man thrusts him (says *The Sanitary Inspector*). Give the pig a fair chance, and he might give sanitary hints to some of his superiors.

"Pigs in certain districts, and especially in the mountainous parts of Sicily, are reared in great number; nearly all the small towns are overrun with them; they are not only useful for food, but act as scavengers to the dirty streets. They are enticed in towns to devour the filthiest food by sprinkling bran over it. In the mountainous districts, where there are oak forests, they are driven up to the high regions to feed on the acorns. The pigs, which are thus driven about under the superintendence of boy swineherds, are all ear-marked, and speedily become accustomed to their new conditions of life. They soon form among themselves a sort of republican government, and are docile to the calls and windings of the horn of their young guardians, who are clothed in very plain and primitive fashion, and live simply on bread and water, taking out with them every day loaves baked in the ovens of the farm, and precisely in such shapes as have been found in the bakers' shops at Pompeii. As before mentioned, the pigs are driven back home at night and housed to avoid disease, and, strange to say, the sheds in which they are housed are scrupulously clean. I have been told that they establish internally a kind of sanitary jurisdiction, and that a pig which is found internally a delinquent against the sanitary rules is attacked with fury by the rest and capitally executed. At any rate I have looked inside covered pig-sties, made of stone, and capable of holding three or four hundred pigs, and found them dry and clean and very dusty."

The Evolution of a Dyspeptic.

How few among us ever stop to think
That dyspepsia is often caused by the tea we drink !

Baldness.

In falling of the hair, a writer in the *Lancet* recommends the following, a little to be rubbed on every night:

R. Tinct. jaborandi	3iv.
Lanolin	3ij.
Glycerin	3ij. M.

The Hygiene of Old Age.

If the practice of hygienic teaching tends to health and happiness in the young, it becomes a vital necessity to the old. That is to say, while a young person may continue to exist even though he disregard the laws of hygiene, such neglect may, at any moment, prove fatal to the aged person. Commenting on the hygiene of old age, the *Journal de la Sante* very truly says that sicknesses of old age can be prevented, but are seldom cured. The best hygiene consists in proper food and moderate exercise, aided by comfort and cheerfulness. The aged should be careful not to overload the stomach. The pulse should be taken in the morning before breakfast; slight variations indicate an approaching illness. If the pulse is regular, the digestion good, and the mind cheerful, one can be certain that the condition of health is satisfactory. On the other hand, if the pulse is too rapid, the amount of food must be decreased, but if too slow and weak, more substantial food is demanded. Owing to the diminished amount of exercise, the quantity of food should be correspondingly reduced. Old persons are more susceptible to cold in winter and, therefore, should be more warmly clad and better nourished. If perspiration has been suppressed by the cold, even without bad effects, this will be shown by a larger quantity of pale urine. Constipation is more injurious to the old than any other condition. Meat should be eaten only once daily, at the midday meal, the breakfast and supper being light. Milk is an easily digested food, especially the milk of the ass. Cow's milk should be diluted with water if the person be living in the country; in the city this may be left to milkmen.

Another Guilty Town Pump.

A report has been made on an outbreak of typhoid fever in Arundel, England. Of forty-three persons attacked, forty-two had used water from a certain "town pump." The analysis of the water indicated pollution. An examination showed there was a leakage into the well, probably from the uneven surface of the square where the pump was located, and around which stood pools of dirty water where the fortnightly market was held. The well was closed, and there was then a rapid diminution of the epidemic. Before the typhoid fever there was a remarkable prevalence of diarrhoea.

Comfortable and Healthy Houses.

A large proportion of the colds and ailments of the respiratory organs are attributable to the want of proper measures being taken by builders in laying foundations and in constructing the basements of houses, says the *London News*. Hundreds of the houses in suburban districts are built upon clay and marshy ground, often of "made earth" and rubbish; the foundations being laid on the damp soil without concrete or proper courses to prevent the rising of damp in them.

A few of the causes which contribute to cold and uncomfortable houses is the imperfect arrest of dampness from the soil. The only way of securing a healthful house is to cut it off as much as possible from the soil on which it stands. Ideally, one may imagine a house standing on stilts or piers, having a free current of air below, and a stair up to the floor; but this would be unattainable under existing arrangements. The next best thing is to obtain a well-ventilated cellar, or what is almost as good, a sufficient air space between the ground and the floor, this space being well ventilated and the ground covered with asphalt or concrete. There is an air space below the floor, but it is generally a rough and unlevelled surface of rubbish, with air passages so scantily introduced, and often clogged up, that the air is in a state of stagnation, and the emanations from the soil are sucked up into the house by the warmth and fires, particularly if hot-air furnaces are used. Another danger is added if a cesspool is near the house. Many of the houses and tenements built almost level with the ground are particularly open to suspicion. A fast-decaying floor or a mildewed appearance of dampness, or a musty smell under oilcloth or linoleum in the hall or passage, will reveal the evil. On examination it is found, on taking rotten boards up, that the joists are close to or rest on the ground, that the bond timber is rotten, or no damp-proof course inserted. Hundreds of small houses are found nearly in this condition of incipient decay, which often begins under the passage floor, near the staircase or back door. The only remedy is to excavate the soil, underpin the walls, and lay a damp course over-soil, replacing the timber on sleeper walls of proper construction. The want of ventilation is usually found to be the cause. Houses having half basements below the ground floor are very common, but these as living rooms are highly objectionable.—*Sanitary News*.

Lincoln's Hygiene.

Among all the almost innumerable wise sayings that have come down to us from that most wonderfully observant and practical man of common sense, Abraham Lincoln, there are few that are so thoroughly imbued with the very essence of wisdom as the following sentences which are found in a letter written to a friend:

"Do not worry. Eat three square meals a day. Say your prayers. Think of your wife. Be courteous to your creditors. Keep your digestion good. Steer clear of biliousness. Exercise. Go slow and go easy. Maybe there are other things that your especial case requires to make you happy; but, my friend, these, I reckon, will give you a good lift."

Prevention of Diphtheria.

Dr. Augustus Caille concludes a paper on this subject, read before the American Pediatric Society, by saying that at the present time his conviction is firm that, in the absence of filthy carious teeth and nasal obstruction from adenoid vegetations or greatly enlarged tonsils, the daily prolonged use of mild antiseptic liquids by means of spray, insufflation or gargling, will prevent diphtheritic infection. He claims, also, that this procedure is indicated for those who are exposed to diphtheritic infection; and also as routine treatment for every case of nasal catarrh, pertussis, measles and scarlet fever; in fact for every condition in children in whom the naso-pharyngeal mucous membrane is hyperemic, or congested, and therefore predisposed to diphtheritic infection.—*Druggists' Circular*.

The Value of Muscle and Health.

"I was talking to a young lady not long ago about exercising her muscles and making herself strong," says Dr. J. H. Kellogg. "'Oh, no; the ladies of my set would say that I was too masculine if I was strong and vigorous.' This idea seems to be in a great deal of our Sunday-school literature. If a woman is spiritually good she is always sickly; if boys or girls are especially good, they are hunch-backed. Vigorous health is conducive to good morals. If you want a boy to have good morals the way to begin is to train his muscles. It seems to me that the training of the muscles of the boys and girls is one of the most important things that can be considered. If a child's muscles are quite thoroughly trained up to the age of sixteen or eighteen years, he is laying in a stock of health that will last him a lifetime. It will be found of more value to him than if his father had left him half a million dollars."

A CORRESPONDENT places the address of a letter on the back thereof, the writing being across the folded parts of the envelope. He suggests this plan as an effective method of preventing the illicit opening of letters by steaming, etc. For the intended purpose the suggestion appears to be a good one.

Guardians for Confirmed Drinkers.

A bill for the suppression of drunkenness, which has been introduced into the Prussian Parliament, provides that every person adjudged to be an habitual drunkard shall be put under the care of a guardian who shall be held responsible for him.

A Low Death Rate.

Dr. M. M. Kannon, of Los Angeles, writes us that there has been but one death during the last three years in the Sisters' Orphan Asylum of that city. The average number of children in the Asylum is two hundred and fifty-three, and their average age is under four years.

Justice and Hygiene.

The Press, of this city, very truly says that even more than Solomon-like wisdom should characterize the decisions of our judges, now that they have moved into their healthful quarters in the new City Hall. It is a fact that pure air and sunlight will, unquestionably, have an influence in this direction. A judge, he who must decide between the differences of his fellow-men, should be pre-eminently a man of health; for it will be simply impossible for an unhealthy man to be an absolutely just man, and, unless he is surrounded by the elements of good health, it will be impossible for a man to be a good judge in the best sense of the term. It is a matter of the most vital importance that the courts of justice should be large, well-lighted, well-ventilated and cleanly rooms, and it is unquestionably true that the majority of them do not conform to these requirements.

Mortality of Foundlings.

According to the Austrian Statistical Handbook, published in 1888, the total number of foundlings in Austria reported for 1886 was 42,877, of whom 5,615 died, or 13.09 per cent.; of those retained in hospital, 6.71 per cent. died; and of those sent outside to the country nearly 15 per cent. died; the averages for the years 1882 to 1885, inclusive, show about the same as those given for 1885, the presumption also being that many sent from town died, but, having been lost sight of, their deaths did not figure on the records of the institution. As compared with the official statistics of foundling mortality in Paris, the difference is surprising. There were in Paris, in 1874, 2,171 foundlings, of whom about 35 per cent., or 758, died within twelve months; in 1875, 2,720 foundlings, of whom some 40 per cent., or 694, died within twelve months; in 1876, 1,648 foundlings, of whom about 34½ per cent., or 568, died within twelve months; in 1877, 1,493 foundlings, of whom about 36 per cent., or 540, died within twelve months; in 1878, 1,880 foundlings, of whom about 34 per cent., or 643, died within twelve months; and of those who succumbed during this series of years, from 36 to 48 per cent., in the different years died in the first seven days.

Coffee-drinkers in Europe.

According to a calculation published in the *Lancet*, but for the accuracy of which that journal will not vouch, the Dutchman drinks on an average $16\frac{1}{2}$ pounds of coffee per year; the Belgian about half that quantity; the Norwegian about $6\frac{1}{4}$ pounds; the German about $4\frac{1}{4}$ pounds per head, being about two pounds more than the Frenchman, who has the reputation of being a great coffee-drinker; whereas, according to statistics lately taken, the Englishman consumes only half a pound a year, and the Russian one-fifth of a pound.

Medical Examinations in Life Insurance.

We have often felt that it would be a wiser policy for life insurance companies to base their risks rather upon the life habits of an individual than upon a physical examination, which might reveal a condition of health that faulty methods of life could materially modify in the course of a single year. As a step in this direction, we note from the *Medical Record* that three life insurance companies in Great Britain have given up medical examinations of applicants for insurance. They hope to avoid loss by giving only a portion of the premium in case of the insured's death before the lapse of a certain number of years.

Smoking and Physical Development.

From the records of the senior class of Yale College during the past eight years, the non-smokers have proved to have decidedly gained over the smokers in height, weight and lung capacity. All candidates for the crews and other atheletic sports were non-smokers. The non-smokers were 20 per cent. taller than the smokers, 25 per cent. heavier, and had 62 per cent. more lung capacity. In the graduating class of Amherst College of the present year, those not using tobacco have in weight gained 24 per cent. over those using tobacco, in height 37 per cent., in chest girth 42 per cent., while they have a greater average lung capacity by 8.36 cubic inches.—*Medical News*.

Mouth-wash.

David uses the following mixture as a tonic and antiseptic mouth-wash (*Medical News*) :

R. Thymol	7 grs.
Borax	15 grs.
Water	$1\frac{1}{2}$ ozs. M.

A few drops of this are to be placed in a wineglassful of warm water, and the mouth rinsed with it. In cases in which the breath is fetid, owing to deposits about the tonsils and gums, the following wash is said to be serviceable :

R. Borate of sodium	15 grs.
Alcohol	$\frac{1}{2}$ drachm.
Water	1 pint.
Thymol	7 grs. M.

The Wine-drinking Nation.

The French peasant is said to be changing for the worse. He is losing both his thrift and sobriety. He has taken to drink like the inhabitants of the city slums, and his thirst is for brandy. In the villages the women are pictured as obliged—like the wives of the workmen in the cities—to hang about the public houses on pay days and to fight for money to buy bread. Instead of putting his sous and silver in a long stocking, the countryman spends them in the tavern. Formerly he only drank on holidays; now he treats himself and his friends every day in the week. The wives of married peasants soon follow their husbands in vice. Strong liquors are cheap; there is no Sunday or even early closing, and no Blue Ribbon Army in France.

Public Baths in New York.

The Association for Improving the Condition of the Poor has erected a building on Centre Market Place, in New York City, in which anyone in need of a bath can wash and be clean. There are twenty-five bath-rooms in the building, and one thousand people can be accommodated there each day. The charge for a bath, including a new cake of soap and the use of a large crash towel, is only five cents, and free baths are given to those who cannot afford to pay this small sum. The new bathing establishment is the result of a movement started some years ago, at the instance of Dr. Baruch, Chairman of the Committee on Hygiene of the County Medical Society. The Demilt Dispensary also offers facilities to the poor in bathing, having within a few days set up seven bath-rooms in the basement of its building on Twenty-third Street. The fee for a bath is here ten cents, but this charge is remitted if the applicant is unable to pay. If this experiment proves a success, the trustees of the dispensary propose to convert the entire basement into a bath-house, there being space there for forty or more rooms.

Arsenic Poisoning from Coal.

In the *Boston Medical and Surgical Journal*, Prof. Crafts says that a source of contamination with arsenic recently pointed out is from coal. When coal is burnt it is roasted out, and it is the only product of the coal which is at first volatile, and afterward non-volatile. A part of the smoke that goes into the air is arsenious acid mixed with carbon, and a large part of it lodges in the chimneys. Now, take a city like London, or any of the great English cities where coal is burnt very freely; there the quantity of arsenious acid that is given into the air must be very considerable, and it would be interesting to make comparative tests of the urine of persons in a city like Boston and in a city like London. The English coal is very bad coal in this respect. Every ton of coal burns off about twenty to forty pounds of sulphur. That sulphur is transformed into sixty pounds of sulphuric acid, which has left its stain on every marble building in London. We speak of the sulphur because the sulphur is largely accompanied by arsenic.

Painful Teething.

Cocaine is recommended for this trouble; and the following formula, rubbed on the gums several times a day, is said to be effective: 1½ grains cocaine hydrochlorate, 2 fluid ounces syrup, 20 drops tincture of conium.

A Remarkable Family of Centenarians.

Pickaway County, Ohio, lays claim to our attention as possessing Mrs. Margaret Arnold, who is now 112 years old, and bids fair to add some more years yet to her earthly record. Her one hundred and twelfth birthday occurred on the 4th of July last, so that she is just three years younger than is our country.

Mrs. Arnold is 5 feet 2 inches in height and weighs 110 pounds. She has a remarkable constitution, and some who know her think that she may hold out until her one hundred and twenty-fifth year.

Mrs. Arnold has two sisters and one brother living. Her eldest sister, Mrs. Elizabeth Hillard, is living in Lynn County, Iowa, having been twice married. She is 115 years of age.

The other sister, Mrs. John Bailey, lives in Dakota, and is 109 years of age. She is a healthy old lady and walks about without assistance. Her eyesight is excellent, and she is likely to retain her physical vigor for many years to come.

William Kiser, the only living brother, is still alive at the old homestead near Richmond, Va., and is 104 years of age. There is doubtless not another family in the United States or in the world that can show such a wonderful record:

	Ages.
Mrs. Elizabeth Hillard	115
Mrs. Margaret Arnold	112
Mrs. John Bailey	109
William Kiser	104
Total number of years	440
Average age of each	110

Each one of these venerable old people has lived during the administration of every President of the United States and during the greater part of the eventful period of the national history.

One cannot gaze into the countenance of old Mrs. Arnold without feeling that he is in the presence of a most remarkable character.

The last work performed by Mrs. Arnold was about three years ago, when she knit a pair of stockings for her little grandson. These stockings have been preserved as mementos to show the good character of the work done by Mrs. Arnold when she was 108 years of age.

Her eyesight, hearing and vocal organs have almost failed her, and she comprehends but little that is going on about her, her eyes being almost closed. She always knows, however, when there are strangers in the room.

CORRESPONDENCE.

The Outlet of Sewers.

Editor ANNALS OF HYGIENE:

I WILL appreciate greatly your views on a matter pertaining to sewerage and sewage, to wit:

Should a sewer be constructed so as only to empty into the water and not under the water?

Suppose a sewer empties, say eight feet under tide water, can said sewage pass out (fall of tide being only one and one-half feet)?

Is not said form of sewerage improper and dangerous, tending to prevent not only the escape of fecal matter, but noxious gases, said gases passing back into dwellings except where the trapping is very perfect?

In using the terms sewage and sewerage, I take the former to mean "the contents of a sewer," and the latter "the system of sewers."

Jacksonville, Fla.

C. J. BURROUGHS, M.D.

Our idea would be that it would be much better to have the sewage *fall* into the water from the sewer outlet rather than to be discharged *into* the water under its surface. We agree with your apprehension that under the latter contingency the escape of sewage would be interfered with, and the return of sewer gas to the house be facilitated.—EDITOR.

Sleeping with Open Mouth.

Editor ANNALS OF HYGIENE:

FREQUENTLY I see communications in THE ANNALS OF HYGIENE urging the importance of breathing through the nose. Now, there are many persons who breathe through the mouth almost exclusively when sleeping. Is there no means or appliance by which the mouth can be kept closed while sleeping, so as to compel the person to breathe through the nose? I should like to see an article on this subject in the ANNALS OF HYGIENE for the benefit of your many readers. Can you not kindly do this? and oblige

Wilmington, Del.

ALLEN SPEAKMAN.

The natural and customary condition of the mouth is for it to be closed when not voluntarily opened by the individual. In sleep the mouth is usually closed. If one sleeps with the mouth open it is generally because there is some obstruction in the nose, and such a person should consult his physician. If it is found that there is no obstruction, and the *open* mouth in sleeping is merely a matter of habit, then we would suggest the application, at bedtime, of a few strips of adhesive plaster that would hold the mouth closed, persevering in this practice until the "open-mouth" habit has been corrected.—EDITOR.

Biblical Quotations.

Editor ANNALS OF HYGIENE:

WE have been reading THE ANNALS with some interest and perhaps some profit so long as it kept to its own department. We find on page 385 of the August number a digression into the realms of Biblical quotation, and we are tempted to murmur "*Ne sutor supra crepidam.*" Where did our learned medical brother find his quotation, "The wind bloweth where it listeth, and *no man* knoweth whence it cometh or whither it goeth"? If he will turn to the third chapter of the Gospel according to St. John, and the eighth verse, he will

find that the words are addressed to Nicodemus, and read, "The wind bloweth where it listeth, and *thou* hearest the sound thereof, but canst not tell whence it cometh or whither it goeth." We respectfully submit that the scientists of this day may learn to track every breeze that rustles amid the leaves, may map out the course of every wind, and that still the "Master of Israel's" knowledge of such matters at that time is unchanged. In other words, Jesus did not say that no man should ever know whence the wind came, but merely that *Nicodemus* did not know, and we are, therefore, ready for all the information our learned brother can give us on the subject.

A TEXAS PARSON.

Texarkana, Ark.

SPECIAL REPORTS.

State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania.

PRESIDENT,

J. H. McCLELLAND, M.D., of Pittsburg.

SECRETARY,

BENJAMIN LEE, M.D., of Philadelphia.

PEMBERTON DUDLEY, M.D., of Philadelphia.

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J. H. McCLELLAND, M.D., of Pittsburg.

S. T. DAVIS, M.D., of Lancaster.

HOWARD MURPHY, C.E., of Philadelphia.

BENJAMIN LEE, M.D., of Philadelphia.

PLACE OF MEETING,

Supreme Court Room, State Capitol, Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Thursday in May, July and November.

The International Congress of Hygiene and Demography.

Held in London August 10, 11, 12, 13, 14, 15, 17, 1891.

First Day, Monday, August 10.

The opening meeting of the Congress was held in the afternoon in St. James' Hall. About two thousand persons were present. Sir Douglas Galton presented the Report of the Permanent International Committee. The Prince of Wales, President of the Congress, then gave a short address, in which he tendered a hearty greeting to all the members.

Speeches were then made by the following foreign members of the Congress on behalf of the countries they represented, viz., Dr. Brouardel (France), Dr. Van Coler (Prussia), Professor Corradi (Italy), Dr. Roth (Germany), and Professor Körösi (Austria-Hungary). Sir James Paget then moved a vote of thanks to the Prince of Wales for having accepted the office of President, and for the manner in which he had conducted the business of the day. This was seconded and carried unanimously.

Second Day, Tuesday, August 11.

SECTION ON PREVENTIVE MEDICINE.

ADVANCE IN PREVENTIVE MEDICINE.—Sir Joseph Fayrer presided, and gave an interesting introductory address. He spoke of the present aspects of preventive medicine, its recent development, and of how the public mind was becoming gradually imbued with the conviction that prevention was better than cure, and often easier. The advance in preventive medicine had been most remarkable during the last half of the present century. It was now pretty generally understood that about one-fourth of all the mortality in England was caused by preventable disease, that the death-rate of large communities might be

reduced much below that at which it was wont to stand, that the average duration of life might be made to approximate near to the allotted four-score, and that the conditions of living might be greatly ameliorated. Certain well-known diseases were less severe now, if not less frequent. The death-rates from smallpox, enteric fever, typhus and scarlatina had declined of late years; that from diphtheria had increased, showing, perhaps, that the disease was now better differentiated from scarlatina. Dr. Buchanan, in England, and Dr. Bowditch, of Massachusetts, had both showed that there was a striking parallelism between the diminution of the death-rate from phthisis and the drying of the soil resulting from the construction of sewerage works. Preventable disease still killed in England about 125,000 yearly, and it had been calculated that $78\frac{1}{4}$ million of days of labor were lost annually from preventable sickness, which meant \$39,000,000 per annum. It was not to be expected that we could exterminate zymotic disease altogether, but we could diminish its incidence. The speaker was inclined to give a very wide scope to preventive medicine. The records of the past fifty years proved the influence exerted by sanitary measures on vital statistics. The beneficial results of sanitary work were also well illustrated in India. In preventive as in curative medicine, knowledge of causation was essential, and recent advances in physiology, chemistry, histology and pharmacology had done much to throw light on the nature and causes of, and also on the means of preventing or of dealing with, disease. The study of bacteriology was opening out sources from which might flow results of incalculable importance in their bearing on life and health.

THE MODE OF PREVENTING THE SPREAD OF EPIDEMIC DISEASES FROM ONE COUNTRY TO ANOTHER.—Surgeon-General Cunningham then read a paper on this subject. Taking cholera as the type of epidemic disease, he said we had three well-recognized methods of preventing its spread from country to country, viz.: (1) Quarantine; (2) medical inspection; (3) sanitary improvement. Land-quarantine was impracticable, and sea-quarantine had done no good. The liability of the inhabitants of Malta to all epidemics was a good example of the failure of sea-quarantine to effect practical results. Medical inspection of those entering a port was of some merit, and certainly the sick benefited by it, but the third method was the only one of real service.

THE TRANSMISSION OF CHOLERA FROM ONE COUNTRY TO ANOTHER.—Inspector-General Lawson read a paper on the above subject. He said there had been, and still remained, a most serious error in assuming that personal communication was so powerful a factor as many believed. The speaker related three instances, which had occurred of late years, of the outbreak of malignant cholera at points in advance of those which the disease had already reached in the epidemic form. These instances showed that the efficient factor of cholera could be conveyed by atmospheric currents, from where it was already prevailing to localities at a great distance, in sufficient quantity to generate an epidemic. Cholera, therefore, could not be excluded from any country by quarantine, and all that could be done was by hygienic measures to improve the health of the population, and to remove the conditions favoring the formation of foci.

AUSTRALIAN QUARANTINE.—Dr. Ashburton Thompson read a paper on this subject. The views accepted in Australia, he said, were based on the resolutions passed at the Australasian Sanitary Conference held at Sydney in 1884. Medical inspection was the outcome of England's local conditions, was exactly suited to them, and therefore not necessarily suitable where local conditions differed from England's. The degree of protection which quarantine could afford varied inversely with the ease of communication between the infected country and the country to be defended. Quarantine could yield protection commensurate with its cost only in countries whose internal sanitation was good, and its function was not to exclude infection, but to lessen the entering number of the foci of infection. The author then proceeded to point out that nations whose internal sanitary organization was not perfect could not afford to refer the observation of suspects to the country at large. Consequently, limited quarantine should be employed against ships actually carrying cases of exotic disease—that is, vessels and equipment should be cleansed forthwith—but the ship's company should be detained in isolation for periods slightly in excess of recognized incubation periods.

A discussion followed the reading of these papers. Dr. Felkin, of Edinburgh, gave an account of the preventive methods in use among some of the White Nile tribes. Certain African tribes had actually stamped out syphilis by methods of inoculation closely allied to our vaccination. Cholera, to Dr. Felkin's knowledge, had penetrated as far as Uganda and Uynoro, and there the natives recognized the value of preventive methods. On the last occasion they not only evacuated but burnt their villages, with the result that the disease was arrested.

Dr. Simpson, of Calcutta, said everything went to prove that there was no danger of cholera being brought to Europe by sea. India had been considered to be the starting-point of cholera, but India had three populations—the Hindoos, the Mohammedans and the Europeans. The Europeans who traveled were not very subject to cholera; the Hindoos, who were immensely subject to cholera, did not travel at all, because they would lose their caste. Mohammedans were the real danger, and Mecca or Medina might be looked upon as a permanent threat to European security.

Dr. Hewitt, of Minnesota, said quarantine and medical inspection might do much, but not unless they were properly organized.

Le Duc, of Nantes, Professor Brouardel and several others then spoke of the practical good to be obtained from a system of strict quarantine.

Sir Joseph Fayrer remarked that he was in entire accord with all the ordinary hygienic notions of the French, but he could not think their notions about the efficacy of quarantine were serviceable.

Dr. Stokvis, of Amsterdam, spoke favorably of English sanitary measures in India, and Dr. Robert Pringle brought the discussion to a close by expressing his concurrence with the opinion expressed by Surgeon-General Cunningham as to the uselessness of quarantine.

SECTION ON BACTERIOLOGY.

ETIOLOGY OF MALARIA.—The first paper was read by Professor Laveran, of Paris, on "The Etiology of Malaria." He said that the hæmatozoon described by him in 1880 had since been recognized by many other observers. He described the chief forms which it assumed, viz., spherical bodies, flagella, cruciform bodies and rosette-shaped bodies. There were also deeply-pigmented leucocytes to be found in the blood of patients suffering from malaria. The flagella could only be demonstrated in fresh blood; the other forms were well seen in preserved blood. Similar hæmatozoa had been found in different animals—frogs, lizards, marsh tortoises and birds, yet several points of difference existed.

Professor Crookshank congratulated Professor Laveran on his paper, and said the evidence was in favor of the bodies described by M. Laveran being the cause of malaria; but it must not be forgotten that they were also found in healthy animals.

Mr. W. North said there were, no doubt, peculiar changes to be seen in malarial blood, but he could not believe that malaria was due only to these changes. The plasmodium had never as yet been discovered in air, earth, or water, and no results had ever been obtained by the injection of undoubtedly malarial soil.

ASIATIC CHOLERA AND THE COMMA BACILLUS.—Professor Hueppe, of Prague, then read a paper on the above subject. He described the cultivation of the bacillus in different media and under various conditions. He had been able to produce death in the lower animals, which was an advance on Koch's researches.

Dr. Klein said he did not think comma bacilli always occurred in sufficient numbers to produce cholera, and uniform numbers of bacilli were not always present in cholera.

Dr. Cunningham, of Calcutta, said he had found eight different species of comma bacilli. Comma bacilli were also found in the mucoid tissue of healthy apes and guinea-pigs.

Professor Max Gruber, of Vienna, considered that it was almost proved that the comma bacillus was the cause of cholera, though in some minor points he had not obtained the same results as Professor Hueppe had.

Dr. Bruce, of Netley, said that he had injected a pure culture of cholera bacillus into

guinea-pigs, and they died; rats similarly treated did not die. He had found comma bacilli grew well inside eggs, and described some experiments he had performed with egg cultivations.

THE MOUTH AS A FOCUS OF INFECTION, was the title of a paper read by Professor Miller, of Berlin, in which he enumerated the local and general diseases—thirty-five in number—due to the action of bacteria in the mouth, and gave a list of these pathogenic bacteria. In inoculating animals with the saliva of 111 healthy persons, death followed in 101 cases. Two groups of pathogenic bacteria occurred in the mouth, one producing speedy death through septicaemia, the other producing extensive suppuration. The value of antiseptic solutions in prophylaxis was then discussed.

THE BACTERIOLOGY OF DENTAL CARIES.—Mr. Henry Sewill then read a paper on this subject. The active agents in caries, he said, were acids and micro-organisms. As predisposing causes he enumerated: (1) Inherent defects in enamel; (2) crowding or irregularity of the teeth; (3) vitiated buccal secretions.

Professor Gruber described a new pyogenic micro-organism—*micromyces Hoffmanni*—and Professor Crookshank gave an account of his observations on *streptococcus pyogenes*, which had led him to conclude that distinct varieties of the organism existed.

CANCER AS AN INFECTIVE DISEASE.—Messrs. Shattock and Ballance contributed the above paper. They maintained that cancer ought to be regarded as a parasitic disease, though it had not yet been found possible to transmit cancer from one species of animal to another, and all attempts at cultivating a microbe had failed as yet. Cancer had, however, been transferred from one rat to another, and from dog to dog.

PSOROSPERMOSIS AS A POSSIBLE CAUSE OF EPITHELIAL TUMORS.—Dr. Sheridan Delépine read a paper on this subject. He concluded that the evidences which he had been able to collect were against the psorospermial nature of the bodies which he had observed in epithelial tumors, and he thought the same conclusions must extend to the bodies observed in Paget's disease of the breast.

SECTION ON THE RELATION OF THE DISEASES OF ANIMALS TO THOSE OF MAN.

Dr. Roux, of Paris, delivered an address on "The Prevention of Hydrophobia," and gave an account of the results obtained in the Pasteur Institute.

THE PREVENTION OF RABIES IN DOGS was the title of a paper read by Dr. George Fleming. He urged that the following measures should be adopted, viz.: (1) The destruction of rabid dogs; (2) the control of ownerless dogs; (3) muzzling; (4) dog tax and registration. The value of the muzzle in suppressing rabies had been especially demonstrated in London in 1885. In other countries where rabies prevailed and dogs were not muzzled, though other measures—as the dog tax, medal on the collar, leading by a leash, etc.—were adopted, the malady continually manifested itself, and numbers of people perished from hydrophobia every year.

M. Nocard, of Alfort, spoke of a prophylactic treatment which he thought applicable to domestic animals, at least to herbivora. M. Galtier announced some time ago that the injection of rabic virus into the veins of the sheep and the goat did not produce hydrophobia, but rather conferred immunity. He had himself made a number of experiments recently, by which he been able to show: (1) that the intravenous injection of rabic virus would not produce rabies in horses; (2) that if the quantity injected was sufficient, these horses acquired immunity against rabies; (3) that it was possible to protect equines inoculated by intraocular injection when there were introduced into the veins certain quantities of dilute rabid nervous material. He hoped a prophylactic treatment might arise out of the labors of M. Galtier.

Professor Redfern, of Belfast, thought muzzling in certain areas only was ridiculous.

Dr. Ostertag, of Berlin, said that in Berlin all dogs wore muzzles, and a case of hydrophobia had not been reported for ten years.

SECTION ON INFANCY, CHILDHOOD AND SCHOOL LIFE.

THE SCIENTIFIC OBSERVATION AND STUDY OF CHILDREN IN SCHOOLS.—Dr. Francis.

Warner read a paper on the above subject. The paper was based upon observations made upon 50,000 children. He had observed that a large percentage of irregular attendance was due to physical weakness. Low nutrition appeared to be largely dependent upon conditions of low development. A class of children presenting certain nerve-signs were ill-balanced and overmobile, but were usually mentally bright; certain other mental signs were ordinarily associated with low mental status. Eye affections were very numerous, and ophthalmia in all stages was present in some day schools.

Dr. Jacobi, of New York, suggested that feeble-minded children should be trained apart.

Mr. Noble Smith said he had noted a large amount of physical deformity among the working classes in all parts of London, which he attributed to bad nutrition during childhood.

THE EARLY RECOGNITION AND PROBABLE ARREST OF ST. VITUS'S DANCE IN SCHOOL CHILDREN.—Dr. Sturges read a paper with this title. He said the disease was first detected by observation of the muscles of the face, which twitched; then, if the child became ill-tempered and untidy in his appearance, inquiries should be made of the mother whether the child slept well and had sufficient food. The chief causes of chorea arising in the school itself were examinations, unexplained sums and punishment before other children. If there were any muscular infirmity the hand test was infallible. If the child could hold up both hands straight with the fingers open, and there was no falling back of the hands or quivering of the muscles, he was free from any danger of chorea.

Dr. Cheadle remarked that there was another cause besides the wear and tear of learning and nervousness, and that was excitement. He did not agree with Dr. Sturges as to chorea not being a grave disorder.

RINGWORM IN ELEMENTARY SCHOOLS.—Mr. Malcolm Morris read a paper with this title. Ringworm, he said, was very common in London, and he lamented that there was no uniform method adopted in board schools in regard to it.

Dr. Colcott Fox said that there were three alternatives for the stamping out of ringworm in schools, viz.: (1) to place affected children in isolated schools; (2) to admit them to schools, but place them in a separate room; (3) to isolate them on separate forms, germicides being applied to the scalp, and a cap worn during school hours.

EPIDEMICS IN SCHOOLS.—Dr. Shelly, of Hertford, read the above paper. He pointed out that such epidemics usually originated outside of schools, and were favored by the aggregation of susceptible material.

SECTION ON CHEMISTRY AND PHYSICS IN RELATION TO HYGIENE.

Sir Henry Roscoe presided, and gave an address in which he touched on the water supply of cities, the disposal of excreta, air pollution, etc.

TOWN FOGS was the title of a paper read by Dr. W. J. Russell. Fogs acted injuriously, mainly in two ways: (1) by the stoppage of light; and (2) by the toxic effect produced by the impurities retained in them—chiefly sulphurous acid and empyreumatic products of carbonism. The author advocated the abolition of fogs by suppressing heating by means of coal.

FOG IN RELATION TO HEALTH.—Dr. Theodore Williams said he believed London fog was not so fatal as many people had supposed, and he had found that some cases of bronchitic asthma were benefited by exposure to it.

Mr. Ernest Hart remarked that the mortality of London during the previous great fogs had been as great as during a cholera season.

A resolution was adopted requesting the proper authorities to consider whether legislative measures could not be introduced to lessen the amount of smoke produced from dwelling-houses in towns, and thus diminish the density of town fogs.

Dr. Sheridan Delépine and Mr. A. B. Gomess exhibited an apparatus designed to show the possibility of removing the smoke of fires from the air of towns, and of using it for disinfecting sewers. By means of a small amount of water falling a few feet, a large amount of air could be displaced, and the smoke of a fire from a chimney diverted into a system of pipes running in any direction, and by a very simple combination of channels and chambers the sewage itself might be used for the purpose of displacing the smoke and causing it to mix with the sewage.

SECTION ON NAVAL AND MILITARY HYGIENE.

The first paper read was on "Modern Quarantine in Canada and the United States," by Dr. Montizambert, Medical Superintendent of the Canadian Quarantine Service.

Dr. Valentin Vignard discussed the relative value and inconveniences of quarantine and medical inspection. In quarantine the dominant idea was isolation; in medical inspection it was disinfection. The progress of international sanitary prophylaxis demanded that this infection should occupy a more prominent place, and he hoped the word quarantine might pass out of use.

Dr. Stopford Taylor pointed out the want of system in the medical supervision of the mercantile marine in Liverpool.

Dr. Béranger Féraud said that though quarantine was retained, France had not failed to follow the advance of scientific knowledge, and the period of detention of suspected ships or persons was governed accordingly.

Dr. Mason, of Hull, described the precautionary measures adopted with emigrants passing through Hull, to the number of 40,000 or 50,000 annually, *en route* for America.

Among the other subjects of interest brought forward may be mentioned a discussion on "Vertical Writing," in Section IV. It was urged that this should be taught in schools, as the sloping hand ordinarily taught tended to produce bodily deformity in the scholars, who contorted their bodies to produce the sloping hand. A resolution in favor of vertical writing was ultimately carried. In the Section on Preventive Medicine Dr. Arthur Ransome read a paper on "The Prevention of Consumption," in which he urged that the disease was both curable and preventable. Its curability was proved by (1) finding old healed phthisical lesions in the bodies of persons dying from other causes; (2) the testimony of eminent physicians; (3) the returns from consumption hospitals. Its preventability was proved by the diminished mortality from the disease which had followed the drainage and ventilation of barracks and of towns. Dr. Edward Squire and Dr. Gilbert (Havre) also read papers on the same subject. Green Pasha read a paper on "The Influence of the Nile on Mortality in Egypt," in which he showed that in nearly all the towns of Lower Egypt the mortality rose as the river fell and became stagnated. Pure water, drainage and ventilation were required to bring down the enormous mortality. Pure water could be provided if money were available. Dr. Van Dooremal (The Hague) read a paper on the "Prevention of Blindness Due to Occupation." In rural districts, he said, it was generally caused by an insignificant lesion followed by infection; in towns, a severe traumatism was the usual cause. Much could be done to protect work people. Dr. Phineas S. Abraham read a paper on "The Alleged Connection of Vaccination with Leprosy," in which he expressed the opinion that vaccination was not to any extent responsible for the spread of the disease. It nevertheless behooved medical men to be extremely careful in the selection of their lymph for vaccination, and in a country where leprosy was rife it would be advisable to exercise special caution, and, if possible, avoid (as was now done in Hawaii) an indiscriminate arm-to-arm vaccination among the natives. In Section V, Professor Lehmann read a paper on "The Hygienic Importance of Copper," in which he urged that the admixture of even small quantities of copper salts with food should be guarded against. Dr. Garrett read a paper on "The Action of Water on Lead." He maintained that oxidation took place—a white crystalline, insoluble, oxyhydrate of lead being formed. Dr. Percy Frankland discussed the "Importance of Magnesia in Drinking Water," and Dr. Bahadwidji (Bombay) read a paper on "Air Analysis," in which he dwelt upon the injurious action of re-breathed air. A paper by Dr. Marcet, on "The Effects of the Respiration of Carbonic Acid on Man," was read. The practical conclusions drawn by Dr. Marcet were that people working in badly ventilated rooms should sleep in as pure an atmosphere as possible, so as to get rid of the carbonic acid absorbed by the blood during the day; that the effects produced by inhaling the gas depended greatly on the rapidity of the exposure; that when life was threatened by the inhalation of carbonic acid there was no reason to despair of artificial respiration so long as the heart was beating.

A somewhat amusing incident occurred on the last day in Section V, when the President of the Section (Sir Henry Roscoe) proposed to rescind the motion as to the disposal of sewage which had been proposed by himself and carried at a previous sitting of the Section; the ground for this procedure was that the motion which had been passed contravened a rule of the Congress which prohibited the taking a vote on purely scientific questions. In Section VI a little jealousy was evinced at the closing meeting in regard to a motion which had been carried in Section IX, and a resolution was adopted expressing the opinion that the resolution which had been carried in Section IX as to the statutory examination and registration of architects should have been referred to Section VI, and that the motion should be considered by the Congress before it was finally adopted.



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COMMUNICATIONS.

Lessons of Public Sanitation and Their Historical Development.*

BY DR. MAX SCHOTTELIUS,
Professor of Hygiene.

[Concluded from page 481].

MEDICINE, therefore, shone by no means in advantageous light among the Romans; it was regarded as a business suitable only for slaves and freedmen. Besides, the avarice of these Greek physicians demanded so much money, that it awakened the hatred of the free-born Romans. Especially was M. Portius Cato exasperated at the doings of the Greeks. To him, as a disciple of the simple ancient customs, all Grecian manners were distasteful. As he himself was a man of iron strength, he had no regard for the peculiar weaknesses of others, and so he treated his slaves as he did his cattle.

He healed all who were sick as well as he could, according to an old Etruscan surgical work, a part of whose formula of exorcism has come down to us: "Huat Hanat huat ista pista sista damiabo, damnaustra et luxato!" This was for dislocations. He allowed no medicine to be given by a woman, and the ingredients for a sick cow had to be mixed according to the number three.

Aristotle said about a hundred years earlier, "That which we need most and most frequently for the body has the greatest influence on health." Such influence especially have water and air; good Cato was wanting entirely in such knowledge. We would, however, be in error were we to say that the Romans of this period had no understanding whatever of the importance of the care of health. They early learned it, and their prosaic natures recognized the fact that measures for the maintenance of health were cheaper than sickness.

The law of Aquila, even in the fourth century before Christ, declared a physician who had improperly treated a slave liable to the master for the same. And further, that a slave was free who had been cast out on account of incurable sickness and then recovered. On the landed estates, and probably also in Rome, there were erected valetudinaria for sick slaves. At that time

*[Specially translated for THE ANNALS OF HYGIENE, by Lewis H. Taylor, M.D., of Wilkes-Barre, Pa.]

the houses which we call hospitals were called *valetudinaria*, and great care was taken for their regular ventilation and cleanliness, even when not in use. It is not improbable that on large estates extensive hospitals were located which supported their own physicians. A superintendent attended to the male wards and a matron to the female wards. Military hospitals were provided for soldiers and also for horses. Besides these, which were more like large private institutions for the care of the health, the State itself undertook the removal of certain unhygienic conditions which the increased growth of the city produced. The greatest and oldest monument of this sort was the *Cloaca Maxima*, built under Tarquinius Priscus 300 years before Christ, which served to remove the sewage of the city. This immense structure was five meters high and four wide, and in size corresponded to our railway tunnels. Its cleansing, which became necessary 400 years later, cost the sum of 5,000,000 marks. With Rome's increasing wealth high living also increased; and with civilization, the necessity for public sanitation; good water was brought to the city in well-constructed aqueducts; a street ordinance regulated the width of the street as well as its traffic; there were also market ordinances, and another prohibited anyone from being buried or burned within the city. Myrtle and laurel hedges were planted at expense of the State on the strand of the sea, to keep back the vapors of the marshy coast. In spite of all this, the acquisitions of true culture were never made use of in similar manner by any other people in satisfying the insatiable love of luxury as by the Romans. Beside the *valetudinaria*, which were originally built for the use of the laboring class, there arose later similar ones for the gladiators of the rich Romans; for many who were able to pay for them kept gladiators the same as they kept race horses in the public stable.

The lavish supply of water resulted in consumption of the same, such as in later times was never seen. In the period between 400 B.C. and 180 A.D., 800 public baths were established and maintained at the cost of the State. Most of them were furnished with unheard-of magnificence, and had, as in the baths of Diocletian, as many as 3,000 marble seats. Thirty-four aqueducts furnished this greatest city of the world a tremendous supply of water.

The mental development of the people, if we may even speak of such, lay in the hands of the priests, who, in luxuriously endowed temples, had devoted themselves to the dark mysteries of ever-degenerating idolatry. Instead of the elaborate philosophy of Plato and Aristotle and the Grecian gods which honored the beautiful, the true and the good, we find only coarse idols with the animal countenances of long-past times. Such a state of affairs could not fail to work injury to the standing of medical men and to the cause of public sanitation. On account of the great importance, even to exaggeration, given to the care of the body, as well as the riotous manner of living of the Romans, which brought all manner of bodily diseases and complaints with it, the necessity for physicians increased, and good physicians were paid fabulous sums. Thus, Charmis, a hydropath from Massilia, received 200,000 sesterces for the treatment of a patient—that is, 40,000 marks, or \$10,000—and the Prætor Manilius Cornutus gave \$10,000 for the treatment of a skin disease. Krinas, who was fortu-

nately able to see in the position of the stars the necessary prescriptions for his patients, left behind him an estate of 10,000,000 sesterces. In marked contrast to these examples of brilliant incomes of many physicians, the fact remains that the boundless competition, the filling of the profession with unskillful members, the degeneration of medicine to a trade, brought about even at that time a medical proletariat (Hæser, p. 406). Needy doctors held public scientific lectures, and quacks performed exciting operations before the assembled people in the amphitheater. Thus Galen correctly said when he complained of the times: "Doctors are distinguished from robbers only by the fact that the latter carry on their trade in the Sabine Mountains—the former in Rome."

Medical art depends upon medical science, and public sanitation is an indispensable part of the latter; so with the destruction of Roman civilization the meaning of hygiene was more and more lost. As I cannot speak in detail of all that was done for hygiene by the ancients, so also it is beyond my province to follow minutely the process of decay which destroyed the old civilization, and gave over to destruction not only medical science, but also the accumulated mental possessions of man, won in the conflict of many thousands of years.

And as if a special stigma must be put upon this shameless time, that wonderful work, the Alexandrian Library, fell an offering to the flames, destroyed by the degenerated descendants of the same people who almost on the same spot had once laid the foundations of its ancient civilization.

Through all darkness and in spite of all oppression, the Promethean spark of human wisdom glimmered forth, and after its thousand years' slumber glowed into new life. But before we follow this line further it is well to show what were the motives which, as controlling agents, fostered public hygiene among the ancients. With the Egyptians, the Greeks and the Romans, we see that it was furthered according to different principles, and I think it not difficult to explain these differences according to natural causes. In Egypt, on account of the dense population in this truly fertile but limited land, the question of the removal of sewage and the necessity for cleanliness of the body were most prominent. On this account there were numerous prescribed (religious) washings of the body, and dead bodies of animals and men were protected with greatest care from disease-breeding decomposition. In the warm, moist climate of Egypt, many diseases readily arose which were rightly attributed to disorders of digestion and which seemed to be called forth by unsuitable nourishment; from this is explained the strict regulation of diet among the Egyptians, and especially the simple, suitable nourishment of children.

The development of public hygiene was quite different among the Greeks, in a land divided by mountains, which, according to the nature of things, must be separated into small individual States, each of which proudly kept its local patriotism ever in prominent view. The constant strife for the mastery had a strict, disciplinary result, of value to the State, which recognized the worth of sound, strong citizens for the defense of the fatherland. The child was the property of the State, and by the State was brought up to be as useful a member as possible. Therefore we see here public care of the health, in gymnastic

practice, strengthening of the body, etc. The maintenance of power through proper nourishment was thus brought about—the Spartan blood soup and the common meal give us a proof thereof. The highest development of sanitation in Greece was reached later, when in the gymnasia not only the bodily but also the mental culture was cared for, as the State recognized that the best citizens were those who united in full measure bodily and mental power. The reasons why the fruit did not correspond to this beautiful flowering, and that the Greek civilization failed, are not in our task to determine.

While among the Egyptians and the Greeks public sanitation moved in grooves which were prescribed according to the nature of the land, among the Romans far different deciding conditions come into consideration. With these sober, temperate, intellectual men, the principle of utility played an important role from the beginning. In the *valetudinaria*, sick and worn-out slaves were well cared for, but as soon as there was no prospect of repairing the chattel he was cast out. Cato Major says: "Old and sick slaves, weak cattle, old iron, old hides, wool, chariots and unused household furniture must be sold *et si quid aliud supersit, vendat*," and if nothing is to be had for them, throw them away.

The keynote of the old Roman idea in relation to public health was struck; and yet all sorts of salutary ends may be attained even with such motives—thus security and regulation of the traffic of the streets, the supply of good water, and drainage of that which had been used. In short, the greatest care was taken of everything that could be immediately useful to all. But the exclusive care for the principle of utility increased the desire for unlimited riches. The chase after the "almighty dollar" was followed as ardently as in our day, only proportionately with better results and with this difference, that the gathered treasures were the sooner squandered to satisfy the love of enjoyment. As the civilization of the Romans did not originate with themselves, but was brought to them prepared by conquered neighbors, and as they used the metallic and mental gold of these nations without increasing the same, so also their medical science did not originate with themselves, nor was the interest in public health kept alive through the nature of the land, nor through higher ideas of life's purposes. This Rome, at whose feet the world lay, was in the truest sense a slave state. The men were slaves, art and science bowed to the imperious idea of the ruler, and medical science was also drawn into the general decadence as the complaisant servant of the Roman vices. Truly, entirely new ideas were necessary to rescue human civilization from utter destruction and to gather together the good still left in earth and awaken it to new life. A Saviour must come to free from their chains a world of slaves. And He came, His Spirit lived and assumed flesh and blood in the form of Christianity. But the new truth, the new law which restored order to the world, is the law of charity.

Julian the Apostate said: "We see what makes the enemies of the gods so strong—it is their human love toward strangers and the poor."

The idea of helping one's neighbor on account of his suffering and to provide that men may remain free from pain—this is the thought that since the beginning of Christianity has ruled medical science, and through it, above all,

the public care of the people. The spirit of brotherly love showed itself busy, even in the oldest Christian communities, in the care of the poor and the sick; and as Christianity succeeded in power, human feelings, so long repressed, developed everywhere; everywhere arose institutions for the poor and sick to an extent not even attained in the present day (Haeser).

The Hospital of the Bishop of Basilius of Cæsarea was a greater miracle than the Pyramids or the Colossus of Rhodes. The Basilica extended to whole streets around the church, contained almshouses, inns for strangers, and genuine hospitals. At the time of St. Chrysostom (about 400 A.D.) the Church at Constantinople had to feed daily 3,000 paupers, besides the lepers and the sick.

Numerous male and female religious orders chose the care of the sick as their life-work; such were the Knights of St. John, whose mantles were made after the cut of the old statues of Æsculapius and Hippocrates, and which were the badge of the medical calling of this order. The Lazarists, who made it their special duty to care for lepers, even elected their grand master from the midst of those afflicted with the disease.

But the process of development is not completed suddenly in the life of a people as a miracle in a short time, but more than a thousand years elapsed before the fermenting process was completed which separated ancient from modern times. It were truly a profitable task for the historian to seek out in detail these conflicts and disorders of the Middle Ages, to discover their causes, to recognize all that interfered with a peaceful development of civilization, and to show that, in spite of all, the good and right prevailed. So also would it be profitable to follow the history of medicine through the Middle Ages, if only a few rays of light could be seen in this period so heavily cursed with the bodily and mental sufferings of men. But it would be to unfold a sad picture of dark superstition and religious delusion which changed the blessings of the Christian religion into a curse. I would have to show how the knightly orders degenerated, and in riotous living forgot their duties, and how in spite of the councils of Rheims (1131), Montpellier, Tours, etc., and contrary to the will of the Pope, the art of medicine lay in the hands of ignorant monks, who used the same subterfuges and the same means as did the priests of Æsculapius of old.

If the sick were devout souls, then their evil was a benefaction of God and served for the trial of their patience; but if they were obdurate sinners, then the disease was a punishment for their transgressions and a voice calling to repentance (Sprengel II, 389). I would have to inform you of terrible plagues and epidemics, of the pestilence and black death, of leprosy and smallpox. And to all of these visitations were added countless feuds and wars which exhausted the remaining powers of the people. But as the earth, after the elements have spent their rage and the thunderstorms have passed away, is rejuvenated and every creature is refreshed after the anxious hour, so with the new time the sun again broke forth, and from the blood-fertilized earth science brought forth a vigorous flowering and blessed fruit. Then arose our universities successively: Vienna, Heidelberg, Cologne, Erfurth, Krakow, Würzburg, Leipzig, Greifswald, Freiburg, Basle and Tübingen, from which new life streamed forth to all people.

The revival of medical science is to be referred to the influence of the universities; but so far as public sanitation is concerned, aside from the numerous regulations of pestilences, we find nothing that would compare with the well-known interest in the health of the people shown by the States of antiquity.

The history of public sanitation began first in a narrow sense with the humanitarian efforts of the eighteenth century. They were English physicians and noble benefactors of the race (Pringle, 1717; Howard, 1726) who pointed out in general the evils threatening the health of men, and the evils in public life in prisons and hospitals, inconsistent with the true principles of humanity. John Peter Frank, a German savant who lived here in Freiburg from 1809 to 1811, also rendered great service to sanitation through his work on "A System of Medical Police." It would lead us too far were I to name all of the measures favoring sanitation which followed one another in quick succession, or even to mention the care which the State took for the health of the people—measures whose best results may be learned from the Geneva convention (1863), ratified by all the civilized peoples of the world. We ourselves are witnesses of recent important advances in sanitation, which, in respect to the poor and sick, originated under the patronage of the late Empress Augusta of Germany.

It was not my intention merely to sketch in these narrow limits the history of public sanitation, but I would show also from the same that the problems which this part of medical science presents to us are to be deduced from the experience of the past, and a knowledge of such history will greatly aid us toward a proper understanding of the problems which, in our day, are yet to be solved. We must make use of all of the results and all of the sufferings which the people of the past endured and fought in the thousands of years of their struggles, if we, too, would reach the aim of a happy life. Public sanitation, as the truest child of civilization, will be the best aid in the attainment of this end.

As the ancient Egyptians, in their overcrowded land, learned from nature to prevent disease by maintaining the cleanliness of the earth and air, and by strict regulation of their manner of living to stamp out the plague, so, for us, the great problem of sanitation is to secure the mastery of the disease germs which for centuries have threatened our existence. Like the Greeks, we, too, should strengthen body and mind, and, ever filled with true patriotism, be strong against external and internal enemies. Like the true Romans, guided by sound sense of justice and well-matured judgment, we will strive for the security of life to its natural limits and for a due care of all citizens, that each, with his proper claims in health and disease protected by public sanitation, may have an ever-increasing interest in the maintenance of the State. We will let the downfall of Rome serve as a warning, and see to it that public sanitation, the true child of civilization, shall not degenerate into the daughter of enervating luxury.

These are the foundations on which public sanitation of our country is built: scientific and effective work in combating disease, civil and military discipline for strengthening the body and mind, and governmental care of the poor, the

weak and the sick. And these foundations should be laid in, and bound together with, the spirit of philanthropy, which is higher than all science. Then will the blessings not be absent which follow the care for the health of the individual and the community. Even if the fight against death and disease be never fully fought out, still, so long as there are men on earth, they will be able "to live not fully secure, but practically free." We shall attain this end when the individual watches over his own and the State over the public health, and in the continual strife the strong will conquer.

The Beginnings of Disease.

BY JOSEPH F. EDWARDS, M.D.

[Continued from page 485.]

RIGHT here let me enunciate the idea that, after death from chronic organic disease, the evidences of disease will not be confined to any one organ; it will be found, of course, that the organ, the symptoms of disease of which have been the most pronounced, is the most diseased; but, because of the law of balance or equalization of function, about which I have just been telling you, it will be found that all of the vital organs that have been overworked in their efforts to help that one which was primarily deranged have become abnormal. Thus it can be readily understood that if a kidney become incapacitated, to a certain extent, for work, the other kidney and the skin and the liver will help it in its work; now, as the *slight* disability which at first existed in this kidney becomes, gradually, more and more pronounced, and as the organs which have been helping it become fatigued and ultimately deranged, because of the excessive work which they have assumed, we can comprehend that a time will come when this united effort will be unequal to the maintenance of the balance of life, and sudden death may terminate the drama.

But, when we come to think of it, how rarely do we hear of a locomotive explosion when we take into consideration the enormous number of these engines that are continually in use throughout the world. True; because the engineer, as a rule, is a good physician. His knowledge, his experience, his trained eye, his intimate familiarity with what should be the perfect condition and working of his machine and of the slightest evidences of departure therefrom, enable him to detect the first evidences of disorder or the beginnings of chronic derangement in his machine. He carefully watches these changes, and, after a time, the period has come when he feels that his engine is no longer equal to the strain of long runs at high speed, which, if continued, he knows will be very likely to cause an explosion; it is not yet actually diseased, it is equal to many years of effective work, but the labor must be less severe than formerly; the engine is, therefore, no longer used for the through express

trains; it is relegated to haul "locals," where the runs are short, the stops frequent, and the strain reduced to a minimum. For years the engine is of value, and now there comes a time when it is unequal to any more work, and it is discarded; but this period of inutility has been postponed many years by the intelligent forethought of the engineer.

Precisely identical is the case of man. We firmly believe that there are, to-day, millions of men and women, from 45 to 65 years of age, who are in exactly the same condition as was this locomotive when the engineer recommended its withdrawal from "express service;" that is to say, they are not yet diseased, their organs have not yet commenced to degenerate, but they are just on the verge of commencing to do so. Prior to this age, organic disease is not so common, and when it does occur it is rather because either of notoriously faulty habits of life or of lack of natural, inherent vital vigor; such, of course, is not invariably the case; but it may be accepted as an axiom, in order to bring more boldly into view the idea, that when the great mass of human beings reach the age of 45 years, it is very likely that certain changes will commence in their vital organs, infinitely inappreciable in their insignificance at first—changes that can be so held in control as to constitute but the healthy, natural, inevitable molecular phenomena of the organs; or changes that may be so impressed and modified by improper and unnatural influences as to constitute the beginnings of chronic organic disease.

In other words, in plain English, that we may not be misunderstood, every human being from, say, 45 to 65 years of age, presents an organization that is *not inimical* to the development of chronic organic disease, while prior to this age, the very resiliency, so to speak, of a healthy person will make chronic organic disease an unlikely occurrence, the practical deduction from which is that while we should always be careful, the man who has reached 45 and wants to see 85 has reason to increase his care and vigilance.

That we may be clearly understood, let us again explain what we are to understand as a chronic organic disease.

Let us take a mirror, for illustration. The duty or function of this mirror is to reflect an image of whatever may be before it. If, on a damp day, this mirror be coated with moisture, it cannot reflect; every part of the mirror is intact; yet, because of certain conditions, it cannot do that which it is intended to do. Now, let us wipe the dampness from the surface of the mirror, and its function is at once restored to it; the mirror may be said to have been *functionally* deranged. Again, let us expose this same mirror to such influences that the quicksilver, which coats its back, is gradually eaten away; in a short time, as the quicksilver disappears, the image that is reflected is imperfect; this imperfection becomes more and more pronounced, until finally the mirror has absolutely and totally lost its power to reflect. The glass is there, its shape and form remain, its substance is intact, but it is no longer a mirror; it may now be said to be organically deranged, and it is no longer of any use for the purpose for which it was originally designed. If, when we first noticed that the quicksilver was being eaten away, we had looked for the cause and

removed it, our mirror would have continued to reflect, not quite perfectly, but sufficiently well for all practical purposes.

So is it with the human being. The heart, for instance, which is, after all, but a fleshly pump, may become functionally deranged; that is to say, because of certain influences acting upon it, such as tobacco, tea or alcohol, it may be, for a time, incapable of properly performing its duty; but when we remove the cause, the integrity of the organ is restored. But it may be that the normal tissue of the heart is undergoing change; the muscular tissue may be changing into fat; a certain amount of the muscular tissue may be carried away and deposits of foreign matter take its place. Such a heart is in a state of chronic organic disease, and just in proportion as the changes indicated have progressed will be the inability of the organ to properly fulfill its mission.

Therefore, a chronic organic disease always implies that the organ so affected is undergoing certain changes of structure that, in proportion to their extent, interfere with the ability of the organ to do its duty, and that, if unchecked, will ultimately so disorder the organ that it will become useless. The organ so diseased may or not retain its normal appearance to the eye of the ordinary observer, but it has lost the ability to fulfill its part in the drama of life.

I think that I have now made clear the difference between a functional and an organic disease.

Before we dismiss this train of thought we must understand that while a functional disorder may exist alone—that is to say, that when any organ is somewhat derelict in its duty, it is functionally deranged, and that this form of derangement may be present when there is no organic disease—yet, when any organ is organically diseased it must, necessarily, be functionally deranged, because an organ that is the seat of organic disease cannot, of course, properly perform its function.

The practical deduction from this thought is that it is of the utmost importance that we should carefully and accurately distinguish between a *purely* functional disorder and a functional derangement that is dependent upon a commencing organic disease; the former will right itself immediately upon the removal of the cause; the latter will require a most searching inquiry to ascertain the nature and seat of the organic disease, and most intelligent advice, that its progress may be stayed.

Again it must be impressed upon my readers that functional disorders are not such trifling ailments as the public are wont to believe them. Leaving out of consideration the fact that long-continued functional derangement may eventuate in organic disease, we must recognize the fact that sudden death from functional derangement alone is by no means uncommon. Thus we can readily understand that a functional derangement of the kidney (by which its ability to remove the poisonous results of tissue metamorphosis from the system is abrogated) may, by allowing the system to be overwhelmed with the poison which it should have removed, prove suddenly fatal, yet after death the organ will present no evidences of disease. Such cases, of course,

are not common, but I cite the fact to point the danger of belittling the significance of purely functional derangements.

The physician recognizes what he calls "acute disease;" that is to say, a condition between the functional and the chronic organic disease, a condition where the organ affected is unable to perform its duty because of certain changes that have taken place in its structure; it is a condition more than mere functional; it is due, not to some extraneous cause, as in the purely functional affection, but to morbid conditions having their site in the organ itself. With acute disease, this article has nothing to do; the symptoms are usually so urgent that the physician is summoned at once, and I leave such cases to his intelligent care. It is of the insidious and generally unappreciated onset of chronic organic disease that I desire to warn the public. Acute disease carries with it its own warning, so plainly and clearly displayed that no one can help but see it; commencing chronic organic disease is, of all things, the most insidious, and is always very far advanced before its symptoms become so marked as to seriously attract the attention of its victim.

Just as I had finished the last paragraph, a young lady, whom I had been treating for neuralgia of the face, came into my office to pay her bill. In course of conversation she told me that, for a few weeks past, she had been troubled with cramps in the calves of her legs, and that some times after eating she would become sick at the stomach, and would vomit a little sour liquid. She was disposed to make light of the trouble, merely asking whether it was not "waterbrash." "Yes," I said, "it is; but you must remember that 'waterbrash' is a form of dyspepsia, and that dyspepsia must always have a cause. Now, let me ask you a few questions: Do you ever have a *puffiness* of your lower eyelids?" "Yes, I do." "Do your feet ever swell?" "Yes, some." "Do you suffer much with headache!" "Yes, considerably during the past two months." I looked carefully at her face, and noticed that peculiar complexion that is so significant to one who has had much experience with Bright's disease. "Bring me a bottle of your urine, and let me examine it," I said.

A careful examination revealed the fact that this young lady was in the very earliest stages of chronic Bright's disease. Appropriate treatment was at once instituted; and, while there is nothing certain in this world, yet I can promise, with reasonable certainty, that the disease will be, if not cured, at least held in check. I have incorporated this little experience, because I could not better illustrate the insidious nature of the approach of chronic organic disease. "Waterbrash" and cramps in the leg were the only symptoms offered to the observation of this patient of the fatal changes that were *commencing* within her body. Had she been given something to relieve the cramps, and, maybe, some soda or some pepsin for the dyspepsia, her symptoms would have been relieved, and she would have gone placidly along, unconscious of her great peril. After, maybe, one or two years, more urgent symptoms might have called attention to the kidneys, and they would then be found to be diseased beyond redemption; or, perchance, after some imprudence, sudden death would supervene without any further warning of the danger.

If there is one law of nature that might be said to be more firmly established than another, it is that for every *effect* there must be a cause; without a cause an effect is simply impossible. The symptoms or signs of a disordered condition of the system are the effects, or, to be more accurate, they are the manifestations of the effects that must have been produced by a cause. We can accept, as an undisputed fact, the statement that the *typically* healthy human being will present no evident, sensible manifestations of the work of its various organs beyond the evidences of life that will be the result of their harmonious labor. To be more specific, the typically healthy man will be aware of the fact that he is alive, and that the very fact of living is to him an ever-present source of the greatest pleasure and satisfaction; but he will be ignorant (so far as any manifestations of their presence to his senses are concerned) of the existence of his heart, or his stomach, or his kidneys, liver or brain. The functions of a typically healthy man are all performed unconsciously to himself; he lives; he loves to live, because it is a pleasure to him; but that his organs are laboring that he may live, he knows not, because their work is unattended with any manifestations that will make their labor evident to him, save as to their results. Unfortunately, the *typically* healthy man is an extreme rarity; indeed, Dr. Carpenter, the eminent English physiologist, has been credited with the statement that Weston, the pedestrian, was the only *typically* healthy man he had ever seen. Luckily, however, for us all, it is not necessary that a man should have typical health in order that his life may be worth the living. Of course, the nearer one approaches to perfection of health the greater will be his measure of happiness in life, but such is not, as we have said, a necessity. However, the further one departs from the standard of perfection, the less pleasure and satisfaction will he find in life. This, I take it, is a self-evident proposition, that will be accepted as such without any further effort at demonstration.

Now, then, to go back, if we accept the axiom that there must be a cause for every effect, and that the symptom of disease or the disease itself is an effect, then we are prepared for the statement that every case of disease necessarily supposes a pre-existing cause.

Without a cause there can be no effect; without a cause there can be no disease.

With the causes of acute disease we have nothing here to do, as already stated; the causes of chronic organic disease are the mysterious, midnight-assassin-like, insidious, sneaking, surreptitious agencies that we are looking for. Like the masked figure at the ball, whose identity is concealed until the eleventh hour, so with chronic organic disease the fatal changes are hidden under apparently trivial and harmless symptoms until well on toward the fatal termination. It is a fact that chronic organic disease is very slow, as a rule, in its course, yet if you will lay down this book for a moment and reflect upon the history of those of your friends who have died of chronic disease, you will incline to take issue with me and believe that the course of the disease is not so slow, because you will recall cases wherein but a few months, weeks, or, may be, at the most, but a year or two have elapsed between the discovery of the presence of the disease and the death of your friend. But when you read this next sentence you will

know that the disease in question had existed, most likely, for years prior to the period of its discovery, and that at the time of its supposed beginning it was already very far advanced.

We are all familiar with the length of time that a fond parent will tolerate the most unfilial behavior on the part of a loved child; but after a time the most patient person will become annoyed beyond endurance; the annoyance will deepen into disappointment; then into anger; then comes estrangement, and it is now evident to the outside world that there is trouble in this particular family. The cause has been the misbehavior of the child, and the effect is the family estrangement. Not until the cause has been for a long time working does the effect become plainly evident to the outside world, but it has been steadily doing its work for a long time. Now kind friends come forward and endeavor to effect a reconciliation, but the estrangement has become too chronic; had the brewing trouble been recognized in its incipency the kind services and advice of good friends might have banished the growing disagreement, and certainly would have delayed the sorrowful moment of final estrangement.

So with chronic organic disease. If the wise and intelligent physician will recognize that changes are taking place in some vital organ, and if he will searchingly look for and ascertain the cause, in the *beginning*, then can he surely either completely eradicate the trouble or at least materially postpone the date of fatal issue.

[TO BE CONTINUED.]

Kusatsu, Japan, and its Hot Medicinal Baths.

BY W. K. BURTON,

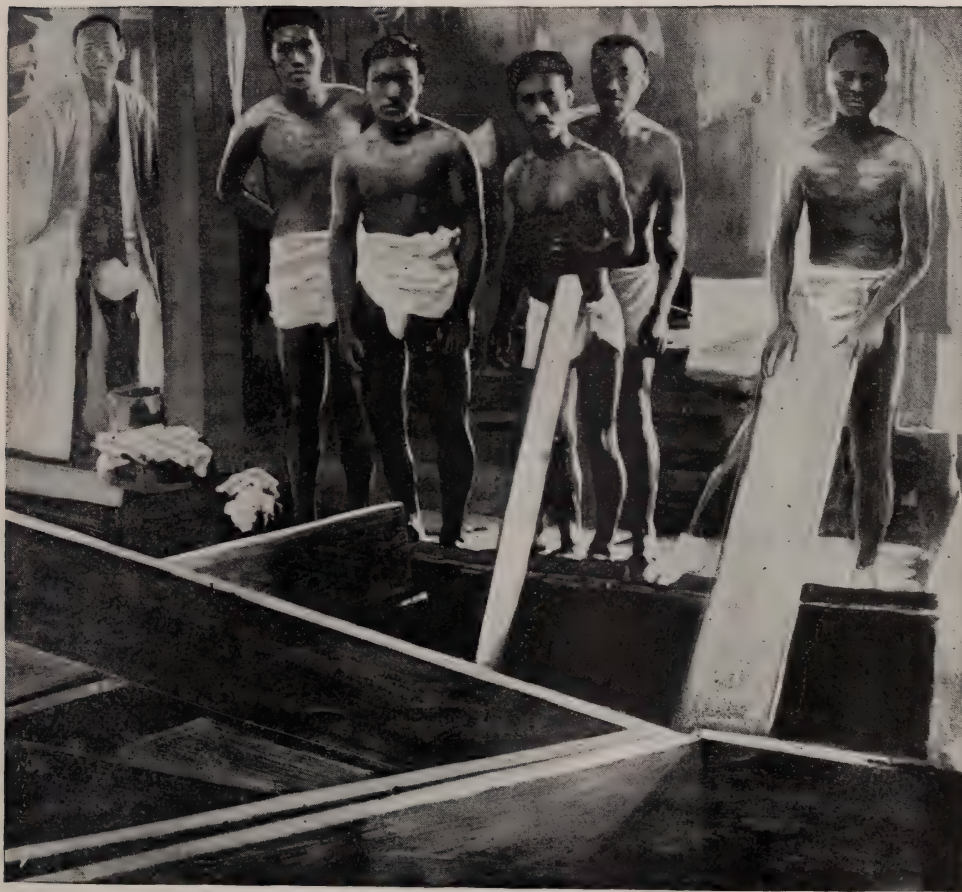
Professor of Sanitary Engineering, Imperial University, Tokio, Japan.

[Concluded from page 475.]

JAPAN is a volcanic country, and it may be said to be bubbling with hot springs from end to end. Some are so hot that the cooking in villages is done by placing the cooking utensils in the running streams. Some are only tepid, some are of pure water, others have strong medicinal qualities. All that are in position accessible by any possibility, and that are hot enough, are used by the Japanese for the supply of baths.

Of all the hot spring towns, Kusatsu has the greatest reputation. It is said that the springs have been in use for more than a thousand years, and the repute that they are held in is indicated by the fact that there is an old proverb to the effect that "even Kusatsu cannot cure love"—a thing, by the way, that would not hold true in the case of foreigners, as some of the baths would

ILLUSTRATION NO. 3.



BATHERS CHURNING THE WATER.

speedily kill any lover that might try them for a cure, by the simple process of boiling him.

As a matter of fact, the baths are of the highest value in the treatment of syphilis, leprosy, and nearly all cases of skin disease, whether syphilitic or not, and they act simply as a specific in cases of rheumatism and gout.

I spent a week this summer at Kusatsu, and found the place so interesting that I think a short description of it might be given to your readers.

The town, or village, is at a height of a little less than 4,000 feet above the sea, and is surrounded with mountains rising to some 8,000 feet. Doubtless the magnificent air adds to the efficiency of the baths.

A better general idea of the village will be had from the two photographs that I sent than by any amount of description. (See frontispiece in October and November issues.) Illustration No. 1 was taken from the upper windows of the hotel in which I lived. A flight of steps will be seen nearly opposite, which leads up to a small temple. Illustration No. 2 was taken from the top of this flight of steps. (See frontispiece in this issue.) In both there will be seen steam from one of the numerous hot springs. In fact, hot water rises out of the ground all about the district. The springs are of various temperatures, and are all powerfully medicinal, although the chemical constituents are not the same in all. The most famous bath is the "Netsu-ho-yu" (literally fever bath). The temperature of this at the source is nearly 160° F., but the water has, of course, to be cooled somewhat before it is used. In the Netsu-ho-yu there are three baths of different temperatures. The temperature of each varies a little, but I found that of the hottest to be, on one occasion when there were actually bathers in it, 128° F. More commonly it is 125° F.

I have no exact analysis of the water, but know that the chief active substances are free hydrochloric and sulphuric acids. The water contains these (principally hydrochloric acid) to the extent of one-quarter per cent. of the whole volume. Besides this, the water, as it issues from the ground, contains about three volumes of sulphureted hydrogen per thousand, and one part of arsenic sulphide in 1,000,000 parts.* Prof. E. Bealz, M.D., attributes the curative action of the hot water to the acids, the effect being analogous to blistering on a large scale. Prof. Divers, on the other hand, attributes the efficiency in skin diseases to the arsenic. Whatever may be the truth of the matter, the fact is that the treatment, after ten days or a fortnight, results in blisters and sores of the skin about the scrotum, between the legs, and under the arms, resulting in the characteristic "Kusatsu walk," the patients moving slowly along with the legs stretched wide apart and the arms held well away from the body. The pain of bathing after the body has got into this condition is intense, and the patients submit to a sort of semi-military drill under the command of a bathing master. This is a most curious sight to see.

* Prof. E. Divers, F.R.S.

The Netsu-ho-yu is a building measuring about forty-five by thirty-five feet, consisting of a wooden roof supported on wooden posts. The spaces between the posts are filled in with bamboo frames. There is a platform raised about a foot and a half above the ground level, immediately within the posts. It is about four feet wide, and immediately within it there is a gangway of about three feet wide on the ground level. Within this are the baths, some three feet deep, sunk below the ground level. As already stated, there are baths at three different temperatures. It is only in the two hottest that the bathers have to submit to discipline.

I managed to secure a set of small photographs of the bathing process, which are far from good, because the interior of the bath is very dark, whilst the lens has to face a bright light on the far side of the building. The following is a description of the drill :

About half an hour before bathing-time a trumpet is sounded, and the bathers begin to arrive. They take their places around the bath and take turns in vigorously churning up the water with broad boards. This exposes the water to evaporation and cools it to the temperatures mentioned above. Illustration No. 3 shows the churners as they paused for a second.

As the time for bathing approaches, the bathing-master, who will be seen in a white dress, in Illustration No. 4, takes his place amongst the bathers. He gives a signal, and every bather takes a large wooden ladle with a short handle, bends down and begins to pour water over his head. This is to prevent the likelihood of congestion in the bath. The pouring continues for five minutes. Illustration No. 4 represents a corner of the bath whilst the bathers are pouring water over their heads. And then there is a second signal, at which all stop for a rest of three minutes. During this time, those who have been most affected by the treatment wrap thin cloth bandages around the parts most affected, as this reduces somewhat the torture of the parboiling process. At the end of the three minutes the signal to enter the bath is given, and very slowly the bathers lower themselves, taking about thirty seconds before they are completely immersed. And now begins the most extraordinary part of the whole affair. It is a sort of a chant on the part of the bathing-master, with an answering chorus from the bathers, the whole thing intended to encourage them in bearing the pain. I found it very difficult to catch the words, but the following is something like what is said in Japanese. A *very* free translation is given in English :

Shitaku yō kereba sagarimasho.	[If you are all ready enter the water.]
Sam pun kan.	[There are three minutes.]
Kai-sei no ni fun.	[There are only two minutes more.]
Chikkuri no shimbo.	[Persevere a little longer.]
Kai-sei no ippun.	[There is only one minute more.]
Shimbo ga kan jin da yo.	[Persevere only a very little longer.]
Shi dzuka oagannasai.	[Get out of the water <i>slowly</i> .]

To each of these sentences, chanted in a strange manner, the hundred or

ILLUSTRATION No. 4.



KUSATSU BATHERS.

so bathers answer from the bath with a sound that is between a shout and a wailing cry that can be heard all over the town. The order to get out of the bath is obeyed, but there is no slowness about the movement. Each bather leaps and scrambles from the bath with an agility that shows how hard he has found it to bear. Illustration No. 5 shows the bathers in the water (see page 477), with a second set sitting and standing round the bath waiting their turn. Nearly a hundred enter the bath at once, sitting just as closely as they can, and the bathing goes on for more than an hour, five times a day.

The usual course is about a month, and, after it is over, the bathers generally proceed to another hot spring village where the waters have the effect of very quickly healing the skin.

THE TREATMENT OF LEPROSY AT KUSATSU.

There are many lepers in Japan, and, although they have never been treated as outcasts bound to crowd together in certain places, they have for long voluntarily congregated at certain places where the treatment is supposed to cure them or to alleviate their sufferings. As a consequence there is a leper quarter at Kusatsu. I have it on the high authority of Prof. Beal, M.D., that the Kusatsu treatment of leprosy actually results in a cure in some cases if the disease be taken at an early stage. So far as I know, Kusatsu is the only place where there are authentic cases of cure of leprosy.

The ordinary Kusatsu bathing treatment might be described as heroic, but what is to be said of that for leprosy?

In Webster's Dictionary the word "moxa" will be found defined as "A woolly, soft substance prepared from the young leaves of *Artemisia Chinensis*, and plants of other species, and burned on the skin to produce an ulcer!"

So far as I know, "moxa" is the only Japanese word that has been incorporated in the English language—by the way, Webster professes his ignorance of the origin of it. It is more strictly "mogusa," the "u" practically silent.

In the treatment for leprosy at Kusatsu the bathing is persevered in for one hundred days—although not in water quite so hot as that of the Netsu-ho-yu—and on every one of these hundred days 1,000 moxa are applied to the skin, all affected parts being cauterized over and over again! It is truly doubtful whether the cure is not worse than the disease. The illustration on page 474 is that of a patient who has undergone part of the treatment.

The moxa is applied by a tolerably handsome middle-aged woman. She was a leper some fifteen years ago, but was entirely cured by the treatment. It is only on looking closely into her face that one can see that her skin is covered with innumerable minute pits, the result of the 100,000 moxa!

PHYSICIANS have announced that yellow fever can be carried by a mosquito's bill. The disease has not yet been named that is carried by a doctor's bill, but it is something like paralysis.

The Communicability of Consumption.*

BY BENJAMIN LEE, A.M., M.D., PH.D.,
Secretary of the State Board of Health of Pennsylvania.

THERE are certain questions which can only be successfully studied on a grand scale. A few scattered experiments here and there, the observations of this or that physician, in the limited field of his own practice, are entirely inadequate to afford a solution. Such a one, for example, is the controversy between vegetarians and those who advocate the use of a partly animal diet. We can not take the experience of one individual, or even of a number of individuals, and feel satisfied to deduce a rule of life from it which shall be of general application. To solve this problem, we must note the effect on entire races of men during periods of centuries. The question is not, "Does this or that man, who abstains from the use of meat, enjoy as good health, or better health, than his omnivorous neighbor?" but, "Do those nations which live principally on cereals and vegetables furnish as fine types of manhood, physically, intellectually and morally, as those whose diet contains a considerable proportion of meat?" So, in regard to this question of the "Communicability"—for I prefer this word to the one in common use, "Contagiousness of Consumption"—one doctor will bring up forty cases in which the disease has appeared in the families in his practice, and has not spread to other members of these families. Another, equally well informed and reliable, will adduce forty other cases, in each of which he was able to trace direct communication of the affection. Neither of these men will convince us. There are so many side-issues in each instance that a tolerably plausible argument can be made either way. To obtain a really crucial experiment we must compare races, not individuals. Such a comparison has been made. Centuries ago consumption was a very common disease in the north of Europe, and especially in England, as it is to-day. It was a very rare disease in the south of Europe, along the shores of the Mediterranean, and especially in Italy. As means of travel began to multiply, the victims of the disease sought refuge in constantly and rapidly increasing numbers on the warmer sides of the Alps, the Appenines and the Pyrenees. This afforded an opportunity for observation on a large scale. Did these health-seekers bring with them the seeds of a disease not indigenous to any extent to the country in which they took refuge? The universal experience of people and of physicians gave an affirmative answer to this inquiry. The practical result of this conviction was the insistence on the part of the people, the profession and the authorities on certain precautions in regard to intercourse with consumptives, and the most rigorous system of disinfection of apartments which had been occupied by them. To such an extent was this practiced that it became a most serious annoyance to the sufferers who visited Italy and their friends. The result was that so greatly was the threatened spread among the nation checked, that eventually a sense of security was bred, which, together

* Read before the State Sanitary Convention at Altoona.

with the immense influx of northern travel and the preponderance of British medical opinion, always averse to this belief, gradually led to an abandonment of these precautions to a considerable extent. This fact does not destroy the value of the experiment, however, which remains a historical fact. Meanwhile, the subject has been studied from an entirely different standpoint. The investigations of that patient and careful germ-hunter, Koch, have convinced three-fourths of the physicians of the civilized world that the bacillus tuberculosis is the essential cause of consumption, and that the dried and pulverized sputum or expectoration of the consumptive is the means of its propagation and transmission. This discovery will so far modify medical belief within a few years that the new and more scientific precautions which will be taken will prevent us from ever knowing to what extent the relaxation of the restrictions formerly prevalent in Italy have led, or would have led, to a dissemination of the disease among her native population.

Meanwhile, our duty is to ourselves. We must use every possible precaution to keep the air of our homes and of our streets free from the presence of those little germs which have the power of working such terrible havoc in our lungs if we breathe them in. To accomplish this, our aim must be to prevent them from ever becoming dry until they are destroyed. They are formed in the lungs of the consumptive and pass out to the air, not by the breath, but with the sputum, or spit. Hence, the consumptive must be instructed never to spit where the expectoration can become dry and thus liberate the germs. That is to say, on the ground, or the pavement, or the floor, or on his handkerchief. The cuspidor or cup which he uses should always contain water, and if a small quantity of disinfectant is added to the water, so much the better. If he is well enough to go about he should carry in his pocket a little flask for the purpose of receiving the sputa, in which a small quantity of disinfectant has been placed. There is one especially constructed for the purpose. It has in it a little cologne water. If you will examine it you will see that it is so constructed that the water cannot escape no matter in what position it is held. There is a cap on each end. The receiving end is made with a wide mouth, and the cap is simply held in place by a slight spring. You observe that, as I open this cover and turn the flask upside down, not a drop of the fluid escapes. The other end is made with a much smaller opening and is stopped with a cork, over which is screwed a metallic cap, making it air-tight. This end is used only for the purpose of emptying and cleansing the flask. In his own house the patient should have a cuspidor, smaller at the mouth than below so that the sputa cannot dry upon its sides, in every room in which he passes any considerable portion of his time; and, as already said, these cuspidors should never be allowed to become dry and should be supplied every day. If confined to his bed it will be well for him to be provided with the stiff paper cups which are now made for the purpose, and which can be burned or otherwise safely disposed of when used. I have brought a few of these for distribution. If these cannot be obtained, a few thicknesses of newspaper, folded into a cone and nicked on the edge, will form a very satisfactory substitute.

The Enemies of Happiness.

BY CLARENCE T. ATKINSON,

Bordentown, N. J.

I HAVE recently attempted to call attention to the importance of happiness as a requisite of good health. A few suggestions as to the cause of unhappiness, and its consequential train of diseases and misery, may possibly be appreciated by the readers of *THE ANNALS OF HYGIENE*.

The first great enemy of happiness to which I call attention is *anxiety*. This is a very fatal enemy of true and substantial happiness. It is a consuming fire, kindled in the human breast, which destroys our vitality and paralyzes our activity. Useful and pleasant occupations are its unfortunate victims. Some people are most anxious over every trifling affair of life. The rule should be: Let events work out their own natural and necessary results, without the individual fretting and worrying about such unknowable and consequential results.

The creature cannot rise above the sovereign Creator and make or unmake the laws of nature and creation.

"Man may be the architect of his own fortune," but he is not the supreme commander of the multitudinous array of events which ferociously assail his ramparts of happiness.

Preference may take such a hold on us as to become a violent and exclusive passion, and yet the hidden hand of inevitable fate may unfeelingly crush the preference in sad disappointment. Man makes laws to govern him in his relations to other men, but he cannot make laws to control his own organized self. He is much like a machine that must work harmoniously with its principles of motion, or else there is jerking and spasmodic labor, that very soon wears out the machinery. To be sure, a machine cannot have anxiety, but a wheel may slip out of place. When you destroy your happiness by anxiety, you are like the machine with a slipped wheel.

If you are looking forward to some pleasure, and you fear rain on that day, you worry and fret and burn with anxiety about the stormy day that may be. Do your fretting and anxiousness prevent the falling of the rain? Your worry would never make the rain stop, or the sun shine.

Do you believe the Creator, who made nature and her laws, and man with all his faculties and limitations, intended His subject of creation to be anxious about results bound to follow from the operation of His immutable laws? The present has events abundantly sufficient for the maintenance of healthy activity.

If you have contracted the habit of anxiety, break it up at once. Live in the bright sunlight of to-day, and not in the dismal and foreboding to-morrow.

Anger.—This is one of the great enemies of happiness. It is a fruitful disorganizer of the human equilibrium. The train of unhygienic influences following this passion is innumerable. Angry people cannot be happy. The

spoiled feeling will last for a long time. It is a giant force created in the human system, which few frames are strong enough to endure without sickness or lost energy following its existence. This uncontrolled passion wastes the vitality, dulls the brain, takes away the appetite, and produces weakness in every organ, besides degrading the unfortunate victim. These are the most notable consequences. It is a gross violation of the laws of happiness. If you put a large and powerful engine in frail and unsubstantial masonry, it will soon break down its piers and encasements. So anger is a great strain, an engine too large for the frail and delicate human system.

Discontent.—In the charming fields of fiction, on the pages of history and in our everyday life, do we find countless instances of discontent producing the most painful and execrable unhappiness. An unsettled condition of mind or sombre doubt is a direct influence against happiness. "The noblest minds the most contentment have," says a learned author. Observation proves the truth of the remark. Contentment is a tonic in which poor and rich alike may indulge.

Many people fret about dying and all other absolutely certain events in life and death. All the fretting does not delay or prevent the foreordained circumstances.

A simple rule is this: Never fret about the outcoming of elements, active or passive, over which you can have no control.

To be happy, one must learn to distinguish between what is subject to human control and what is not so subjected.

Vice.—In this we have a very active enemy of happiness. This destroys the happiness of the perpetrator and those to whom he is related or who claim to be his friends.

Sin, crime, meanness and loss of virtue are plainly deadly enemies of happiness. If they do not at once accomplish, they are sure to end in the destruction of this most desirable attribute of human existence.

Vice is a silent and hidden force, working for days and weeks with a slow and sure weapon in the destruction of all that is grand and beautiful to behold in human nature.

If you would preserve and maintain present and future happiness, you must avoid every form of vice.

False Pride.—Perhaps a very little on this point will suffice. Caste, genteel poverty, life on the strength of blood that has long since ceased to exist, uncertain and disappointing search for genealogy which proves offensive, are great sources of unhappiness. Good character (not reputation), intelligence, force of intellect, honorable activity, justice and real merit are the standards by which true manhood should be measured and valued.

Avarice.—Who can tell the unhappiness this vile principle in the human breast has brought into the world? Many pages of history testify against it. Everywhere in life's multifarious fields of action do we see the abundant unhappiness brought about by this monster ruling principle. It is a powerful and fruitful cause of strikes. The man who is manifolding riches day by day,

with hordes of men struggling for mere existence whose labor results in such manifolding of wealth, permits avarice to dictate a reduction in wages, and then no pen can write the misery and unhappiness which follow.

All conflict between capital and labor should be carried to the marble stoop of palatial and fabulously furnished mansions where dwells the vicious monstrosity of avarice.

Disease.—It may be said that avoiding the enemies already mentioned, disease would not exist in the human system. We must fight diseases. No writing from me or anyone else is needed to show that disease is pre-eminently adverse to happiness. You can avoid this enemy by attention to and conformity with the laws of hygiene. Reading, studying and practicing rules you derive from a work just like *THE ANNALS OF HYGIENE* will kill this arch-enemy of happiness—disease.

With such opportunities for acquiring knowledge of the laws of health and the development of the body and its vital organs, there is no excuse for ignorance.

Very many people suffer just enough to destroy happiness, who have small weaknesses that could easily be overcome by slight attention to the laws of health. Neglect is suicide.

The monsters that sit at the entrance of hell are said to be the fatal foes which bring death and destruction upon mankind. They are: care, sorrow, disease, old age, fright, famine, want, sleep, death, sting of conscience, force, fraud, strife and war. This is material enough for a year's reflection.

Memory as a Test of Age.*

BY DR. BENJAMIN WARD RICHARDSON,
Of London, England.

MEMORY is often a good test of age. When a person begins to find the recollection of current and recent work failing, and when he finds the recollection of events of the early part of his life acutely perceptible, and by a kind of spontaneity recurrent, the evidence is certain that the mind of that person is ageing. The fact is still further emphasized if, with the remembrance of past days, there is a sympathetic response calling forth a sentimental feeling either of pleasure or of pain. There probably is a physiological reason for these phenomena. In early life certain centers of the brain are filled with impressions and images which have become fixed and for a time quiescent. They sleep. While they sleep, other parts of the brain are charged with new impressions, which remain in activity, provoking the physical body into new and continued actions, and constituting the life of the individual as it is seen at work, nay, as it really is. But time goes on, and under the active life the brain cen-

* From the *Æsclepiad*.

ters receiving the later impressions tire, wear out, and for working purposes suspend function and die. Their suspension is not, however, the suspension of the whole of the cerebral organism. The parts first impressed and imprinted—the parts that carry the latent impressions—remain intact, and, no longer oppressed and obscured by that which has accumulated upon them, begin once more to live and display their activities. So aged people who forget the names of those who are staring them in the face, who forget the details of the last ride, or walk, or work, and who forget engagements, letters and hours of meals, remember with the freshness of youth the friends of their youth, the places, habits, conversations, events that have long since past, and have been so long in oblivion.

The study of memory in relation to age is full of practical as well as of philosophical importance. It bears on the value of evidence of observed facts and phenomena at different stages of life. There are thousands of persons who could give no evidence worthy of credence respecting sayings and events of to-day, who could still give the most accurate and reliable evidence about sayings and events of fifty years ago; and, if sympathies change with memories, there is an explanation, clear enough, why with age likes and dislikes should undergo the astonishing modifications we so often witness. I was called once to see a dying man who was advanced in life. He was muttering something strangely.

"What is it he says?" I asked. "I do not know, sir," replied the nurse; "but it's all about Monday, and see how curiously he moves his hands." I listened attentively, and soon caught the words, repeated many times, "O Jesu, Agnus Dei, qui tollis peccati mundi. Miserere nobis." I observed thereupon to my medical brother, whom I had been called to meet in consultation, "He," the patient, "is saying part of a Romish litany. He is a Roman Catholic." "Impossible! I have known him for thirty years, and he has been a man of the freest thought, good in every way, but allied to no creed whatever, and opposed to the Roman Catholic faith." "That may be, but in his early life, I warrant you, he was brought up in that faith and learned its services." On inquiry my conjectures proved correct. In the first five years of life he was trained in the Catholic ceremonial, since which age he had come under influences that had changed the whole tenor of his thoughts.

The point I wish to make in concluding this opusculum is, in the strictest sense, practical and medical. Whenever a patient who has passed the fifties, or is fairly into them, reports that current memory is fading and past memory is reviving, and when he reports also that his sympathies are running with his memories, his current sympathies declining, his old ones reawakening, he is in an indifferent condition. He requires immediate mental rest of those faculties that are becoming impaired, and is in want of pursuits and scenes that will bring new faculties into play. Fortunately, we never use up a tithe of our brain surface. There is always ample uncharged surface to work upon even late in life, and if the brain be not physically diseased, new memories may be called forth which open up new activities and cover in the old. William Harvey, in

his latter days, took to mathematics, and for the first time followed them with ease, much to his quiet. I knew an aged man who took, under the same circumstances, to music, and became quite a fair violinist; from all of which comes a lesson—

In second childishness child-life revive;
Learn something new each day, and so re-live.

The Faults of Development.

Dr. Charles S. Morley, of Detroit, discusses this subject in *The Hahne-mannian*, and he formulates his remarks by concluding that there are a great number of people who have permanent ill-health through faults of development, and after maturity the wisest course to follow is for them to so order their life as not to overtax themselves and to go slower, so to speak, in the race of life than other people. Such people must always take account of what they are going to do, and find out by experience whether they can do it or not; for, as a friend of mine says, "if a person lives to be forty years of age and doesn't know enough not to get sick, then he ought to be sick."

On Preventing the Multiplication of Disease Germs.

In regard to the disease-producing or pathogenic germs, says the *Sanitary News*, it is important to understand what forces or agencies will retard their multiplication or wholly destroy them. In emergencies chemistry is resorted to, and antiseptics and disinfectants are employed, but in the proper prevention of disease such emergencies should not be allowed to arise. Sunlight, pure air and thorough cleanliness are natural enemies to disease germs. They cannot flourish where they have not their proper food, and that is found in dampness, darkness, mold and filth. Keep the habitation flooded with sunshine and pure air, keep away all filth and dampness, and the germs of disease will find no foothold, no nidus in which to breed or food on which to grow. Nature is struggling all the time to keep her domain healthful, and a fit habitation for man; but man shuts out the air and light, contaminates all things about him, and disease is the reward of his recklessness and neglect. There is more health in a sunbeam than in drugs, and more life in pure air than in the physician's skill. The sunlight may fade your parlor carpet, but better that than have disease fade your cheek. The wind may "tan" and "freckle" the face, but it is better tanned and freckled than thin and sallow. Help Nature to keep your habitation healthful by allowing her forces an opportunity to operate. There is more health about you than disease. Health is man's natural condition. He has to violate some law before the penalty of disease is inflicted. He can place about him such conditions that disease germs will invade his system, or he can live amid surroundings so pure that health will bless him both in his freedom from physical ills and in the sweet consciousness of right living.

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EDITORIAL.

A Misapprehension of Hygiene.

A GREAT amount of the public indifference to hygiene may be traced to a misapprehension of its scope and meaning. Those who do not stop to reflect oftentimes jump at the hasty conclusion that to lead a hygienic life means to deprive one's-self of all the pleasures of life, and it is very common to see this exaggerated view of the subject emphasized by satirical comments on hygiene in the lay press. Thus, for instance, our esteemed and funny contemporary, *Puck*, recently published a series of these satirical and wrongly-conceived pictures, which it called "The Food Crank." Let us examine, for a moment, these pictures, and see wherein the idea which they would convey has been erroneously conceived.



"I tell you, my boy, ice cream is never
seen on my table; too much tyrotoxin in it."

Now, it is true that ice cream may prove very injurious, but such is not the rule; rather than call the man a "crank" who never uses it, common sense would dictate that we should call him a "fool" who uses it without proper discrimination. We should never eat ice cream immediately after a meal any more than we should throw a bucket of cold water into the kitchen range and then expect the fire to burn; we should never use *cheap* ice cream, for it is likely that such has been made from *cheap* cream; and *cheap* cream, as well as cheap anything else, is never, and can never be, of the best. If we

use ice cream of good quality, and at the proper time, it will do us no harm whatsoever. Here is *Puck's* first exaggeration.

Here again we find a combination of exaggeration and ignorance. Even though pickles were all colored with copper (which they are not) it would not



"My dear fellow, you mustn't eat those things. Pickles will saturate your system with salts of copper; pepper and mustard are stimulants to alcoholic thirst, and lettuce is chock full of opium."

be a very great deprivation for one to do without them, when we reflect upon the almost limitless number of articles of diet against the healthfulness of which not even the breath of suspicion can be directed. For ourselves, we are not



"I followed you in here, old chap, to talk to you about the dangers of beer, wine and other alcoholic beverages. I want to tell you of the lurking demons of dyspepsia, gout and fusil oil that lie in wait for you," etc., etc.

afraid to eat pickles in moderation, and can see no reason why their use should be condemned. As for pepper and mustard, there is nothing nourishing in them; they are irritants to the stomach, and, in excess, will injure this organ

but, used as any sensible person will use them, to reasonably season our food, they are not only not injurious but are really adjuvants to digestion. In excess, they are injurious, just as any other excess will be. Ignorance is evident in the inclusion of lettuce in this anathema, for if there be one vegetable more wholesome than another it is lettuce.



"STOP, man, as you value your life! Water is charged with lead from the pipes, with the germs of typhoid fever, and the cholera microbe."

In this picture there is no exaggeration, but there is an effort to satirize or ridicule the truth; it would be just as reasonable for *Puck* to point fun at the man who claimed that the man who did not know how to swim, yet jumped overboard in mid-ocean, was in danger of drowning. There is no theory or



"What, milk? and canned condensed milk, at that? Why, don't you know that twenty per cent. of our cattle have tuberculosis, and that canned goods are tainted with poison?"

crankiness or speculation or anything else but *fact* about the *fact* that the excessive use of any liquid that contains alcohol will knock a man out sooner or later. The man who drinks knows this as well as he who does not, but he is willing to take the penalty.

No sanitarian outside of a lunatic asylum ever endeavored to stop a person from drinking water because of the dangers which *Puck* depicts. We all try, and every sensible person must approve of the effort, to get as pure water as possible, but such as we have we must use it if we cannot get better. As with liquor so with impure water, it is inimical to health, and we all know it; but if we cannot get pure, then we must use that which is impure.

There is no earthly necessity for a person to use canned goods of any kind, and while the risk to health therein is not so great, yet if one will use them he does so knowing that there is some risk, and he is willing to assume it. As to the milk question, we must claim, because we personally know it to be a fact, that there is very little milk sold in our large cities that is fit for use.

Of course, we know that the very man who drew these pictures for *Puck* did not mean what his drawings would imply. We know that satire always implies exaggeration, but we also know that satire is more potent than eloquence; a sneer will do more negative harm than will argument do of positive good. Hence do we feel that it is hardly proper for intelligent persons to ridicule that science (for science it is) that is calculated to do so much good to humanity.

The Definition of "A Nuisance Prejudicial to Health."

To determine the question of whether a certain industry constitutes a "nuisance prejudicial to health" that ought to be abated, is not always the easy matter that it might, at first thought, seem.

There are so many little fine points, so many collateral considerations, to be taken into question, that it becomes, frequently, a matter for profound thought and very mature deliberation, before the question can be settled. Some cases are patent nuisances, such, for instance, as the maintenance of a slaughter-house (where animal refuse is allowed to lie around to putrefy), in the confines of a city or town, and no one would hesitate to say that such an establishment should either be kept scrupulously clean or be removed, at once, without the corporate limits. But all cases are not so clear as this. In a recent instance, in the western portion of this State, it was claimed that a certain oil refinery was a nuisance because of the emission therefrom of certain noxious and offensive smells and vapors. The defendants in this case offered evidence to show how much capital was invested in their business, to how many persons they gave employment, how long they had been established and the influence of their business upon the growth and prosperity of the Commonwealth. The court decided that such evidence had no bearing on the case, and refused to admit it.

Upon appeal, however, to the Supreme Court, it was held by this body that it was an error to have ruled out this evidence, it being held that "The right to pure air is, in one sense, an absolute one, for all persons have the right to life and health, and such a contamination of the air as is injurious to health cannot be justified; but, in another sense, it is relative and depends upon one's surroundings."

Justice Williams, with singular wisdom and discretion, said: "People who live in great cities, that are sustained by manufacturing enterprises, must necessarily be subjected to many annoyances and positive discomforts by reason of noise, dust, smoke and odors, more or less disagreeable, produced by, and resulting from, the business that supports the city. They can only be relieved from them by going into the open country."

To our way of thinking, there is immense wisdom in this position. We understand that our Supreme Court holds that whenever it can be decided unanimously, without question or difference of opinion, that a certain industry is a nuisance prejudicial to health, it should be abated, but that when there is room for doubt, as evidenced by the conflicting and contradictory testimony of equally competent witnesses, then the benefit of the doubt should be given, not to the *few* who *may* be injured by this industry, but to the business that is an essential element of the prosperity of the *many*.

Justice Williams evidently entertains the sound doctrine that, since cities are *artificial* aggregations of humanity, no one has the right to look therein for ideal conditions, and that the detriment of a few must bow to the interests of the many.

Of course we do not hold that nuisances should be allowed to exist, but, that we may not be misunderstood, we would formulate our idea as follows: If a certain industry is an unquestioned nuisance, it should be abated; if there is a division of opinion on the subject, and if it is an element of prosperity to its neighborhood, it should not be interfered with.

Policy versus Health.

OUR representative informs us that there are several prominent business men on Bergenline Avenue, in the town of Union, N. J., who intelligently recognize the pernicious influences wrought upon health by noxious odors, yet have tolerated the foul, unwholesome stench from privy vaults in the rear of their stores for over four years, each one fearing to make a complaint lest he should "lose custom."

The properties above referred to are on Gardner Street and on Lewis Street; and the owners have permitted the human excrement to overflow and, with some regard for their tenants, have ingeniously raised the seats in order to accommodate them.

One of the merchants declared that he has lost several members of his family through this neglect, while others are constantly ill.

We cannot altogether sympathize with this gentleman and his neighbors; for, while they may live among people who are deplorably ignorant, it is their duty to enlighten them upon all sanitary matters, and prove to them the equal liability which each one, in time, will stand to some contagious disease.

We know not whether there is a local Board of Health in the town of Union, but, if not, someone in that town should report this state of affairs to Dr. E. M. Hunt, Secretary of the State Board of Health, Trenton, N. J.

NOTES AND COMMENTS.

Japanese Dentistry.

A pretty Japanese maiden is about to settle in Chicago in order to study dentistry and to fit her to carry back to her own country a knowledge of the profession which will justify her in practicing it.

A Sanitary Bridal Outfit.

At the marriage of Professor Jæger's daughter, the bride wore a veil made of wool of wonderful fineness and delicacy of texture, and her wedding robe was in itself a practical lesson on the possibilities of wool and a tribute to her father's pet theory on normal clothing.

Health Coming into Fashion.

Health is coming into fashion. Now that the country is becoming safe, we must again turn our attention to the health of our girls. Unless they are healthy, the country is not safe. The fate of our institutions may hang on the precise temperament which our next president shall have inherited from his mother.

Public Baths.

Several American cities, according to the Sanitary Inspector of Augusta, Me., of late have shown an interest in establishing public baths available to the poor during the winter as well as in summer. "A charity of this kind for the mitigation of degradation and disease is a much better investment than crowded hospitals and prisons.

Mr. Crapo Ought to Become a Centenarian.

Mr. Crapo has an evenness of disposition and a smoothness of temper which will enable him to stand defeat better than any other man in Massachusetts. Even when he was turned down for Congress in order to make room for Dr. Davis, he took it quite placidly, and said that he'd rather be beaten than physicked by him.

Utilization of Old Tin Cans.

According to W. L. Brockway's invention, waste tin plate, fruit cans, etc., are heated to 1,000° F. in a furnace in which a reducing atmosphere is maintained. It is claimed that in about from three to seven minutes the tin and solder are completely separated from the iron and fall to the bottom of the furnace, while the iron is left in such a condition that after cleaning, cold rolling and annealing, it is suitable for applications in which a tough high-class iron plate or foil is required.

The Vindictive Bachelor.

A Hamburg bachelor, who died recently, got even with a woman who jilted him by leaving her a legacy of 12,000 marks and the following letter:—
“Madam: Some thirty years ago I was a suitor for your hand in marriage. You refused my offer, and as a consequence my days have been passed in peace and quietness. Now I requite your goodness.”

One Advantage of Being Very Fat.

We find it reported, in the daily papers, that a young woman, in San Francisco, despondent because of a quarrel with her brother, determined to commit suicide by drowning in the Bay. She walked out into the water and soon floated beyond her depth, but she was so fat she wouldn't sink. After bobbing around like a cork for a long time she was hauled in and locked in jail.

Sauerkraut for Dyspepsia.

We must plead guilty to but a very slight acquaintance with this favorite German dish, hence we are prepared merely to chronicle the fact (without either favorable or adverse comment thereon) that Franz Heller, in the *Wiener Medizinische Presse*, believes that sauerkraut, eaten at meals, is a most excellent remedy for chronic dyspepsia in weakly, delicate persons, of a nervous temperament.

The Potency of Malnutrition.

Malnutrition is the keynote to many disorders of childhood. Not only such obvious forms of malnutrition as the marasmus of diarrhæa and the wasting of phthisis should be noted, but also rickets in its frequently overlooked incipient forms, scurvy and a host of troubles characterized by anæmia, flabbiness, inactivity, chorea, sweating and other neuroses should receive attention. Most of these yield to *proper* dietetic measures.

New Style of Arc Lamp.

Mr. Xavier Wertz, of New York, has produced a combination arc and incandescent lamp which may develop into a successful article. The carbons are placed in an exhausted glass globe, and burn so slowly that no feeding is required. A short thick, hollow carbon is connected to a conductor and inserted in a globe. The second carbon passes inside the first, having a solid core and round head, which rests upon the cylindrical carbon. The space between is filled with an insulating layer of asbestos, which prevents any current passing except at the upper surface of the cylindrical carbon, where the two carbons touch. At this point of contact an arc is formed of sufficient size to produce a light of considerable power. The lamp is intended for high tension series working, and may be fitted with a cut-out and used on ordinary arc lamp circuits.

An Absent-minded Judge.

Once Judge Broady, of Omaha, left his office and on the outer door posted a card with the words, "Back again in ten minutes. Take a seat and wait." At the foot of the stairs he happened to remember that he had forgotten something. Slowly he climbed the steps, and once more he became submerged in his own thoughts. At the door of his office he paused and read the card on the door. Then the Judge deliberately sat down and waited for himself to come back.

An Unfailing Alarm Clock.

An early riser's outfit is one of the recent electrical novelties. It has a decided advantage over the old alarm clock, which would run down and allow the early riser to take another nap. The electrical outfit does not need any winding. It keeps up its nerve-grating jangle for two hours, unless turned off. The early riser is bound to get out of bed and cut off the current, and then, of course, the purpose is accomplished; the early riser, having arisen and duly "cussed" the alarm, remains up for the remainder of day.

Cremation in Paris.

The practice of cremation in place of ordinary burial is making steady progress in Paris, in spite of the opposition to it which exists in certain quarters. At the new crematorium of the Pere-la-Chaise Cemetery a furnace is in operation which will reduce a body to ashes in less than an hour, at a cost of about 30 cents for fuel. Since the establishment of this system in the French capital, 1,200 unclaimed bodies of persons who have died in hospitals have been thus disposed of, besides the bodies of 300 of the well-to-do classes, whose wishes have been thus complied with.

What Elixir the Best?

A correspondent sends the subjoined clipping to the *Medical Record*: "Napoleon's disaster at the battle of Leipzig is popularly set down to his having eaten a bun in a hurry, and so brought on dyspepsia; but it would be a very curious page of history if we could learn how many wars, how much bloodshed and how much cruelty have had their origin in imperfect action of the bowels. Washington Irving, in his 'Lives of the Caliphs,' tells of a certain emir, named Al Helaji, who suffered for many years from dyspepsia and abdominal pains, and this wretched man distinguished himself, perhaps above all other rulers who ever lived, in the enormous number of people whom he sentenced to imprisonment and death. He is said to have caused the death of no less 120,000 persons, besides those who fell in battle, and to have left 50,000 in prison when he died himself. How much of all this misery might have been averted by the judicious use of mild aperients it is as impossible for anyone now to tell, as it is to estimate the debt of gratitude which Europe owes to the physician of Louis XIV for the care he took of the digestive organs of that august monarch."

The Infectious Diseases Institute at Berlin.

The new institute, which is designed to be under the direction of Dr. Koch, at Berlin, was opened August 17, 1891, and the first six patients were brought in that same evening. Professor Brieger has been appointed over the clinical department, and Dr. Pfeiffer over the scientific laboratory. Dr. Behring is among the assistants. The nursing has been assigned to the Brandenburg Sisterhood, a body ignoring all sectarian distinctions.

Dilution is a Delusion.

The Sanitary News says: The question of the disposal of sewage is receiving a new impetus in the way of discussion. The disposal by waterways is being more strongly condemned, and disposal by artificial means advocated. The truth will come eventually that pure water cannot be obtained from streams into which sewage is emptied. *Dilution is a delusion and a snare.* Some other means for the disposal of sewage will come soon as one of the extremest necessities.

Malaria and Surgery.

Dr. M. Perez talks good sense when he warns physicians against performing surgical operations in malarial localities, if possible. If a patient, upon whom an operation is about to be performed, has, at some previous time, suffered from malaria, Dr. Perez would prepare him for the operation by a course of quinine, for he very logically concludes that if malaria be latent in the system, the debilitating effects of an operation may allow the slumbering disease to flame forth into new life.

A Possible Cause of Weak Eyes.

Dr. Van Rheder, a prominent Belgian oculist, holds that the modern deterioration of eyesight is largely due to an increasing lack of opportunity for eye-practice. We are not dependent on the gift of far-sightedness, which enabled our ancestors to dispense with telescopes; our range of vision is limited by narrow streets or the still narrower walls of our studies and workshops till our optic nerves get impaired by sheer want of exercise, just as our teeth have been impaired by the introduction of hash-mills and our arm-muscles by the invention of spear-superseding gunpowder.

Niggardly Waists and Niggardly Brains.

Frances E. Willard sarcastically remarks, when speaking of the silly fashion of tight lacing, and its detriment to women, that niggardly brains and niggardly waists go together.

Another woman of shrewd observation has made this statement: that brain power, other things being equal, is in proportion to the breathing power; and that, as a rule, the world's work, intellectually speaking (so far certainly as women are concerned), was done by those women who have good lungs and use them; not by dwarfish, wasp-waisted creatures who represent the butterflies of the day.

Dust and Disease.

Dust is the great conveyer of micro-organisms. At 2 A.M., when a city is most quiet, the fewest germs are to be found in the air; at 8 A.M., the industry of domestic servants and dustmen has already made the air teem with germs. At 2 P.M., the proportion has again greatly fallen; at 7 P.M., it is once more high, for many houses are being "tidied up;" besides sundry kitchen operations are unhygienic. Thus the "small hours," unfavorable in many respects to patients hovering between life and death, are the least poisonous of the twenty-four. The day proportions indicate that household duties cause more germ diffusion than is excited by traffic and industry.

Vaccination.

Before the vaccination by Jenner was adopted, says *The Weekly Medical Review*, smallpox was one of the most formidable scourges of the human race, causing a mortality of ten per cent. Since its general adoption it is less than one per cent. During the prevalence of smallpox in Prussia, from 1857 to 1861, nearly 8,000 among the civil population died. The mortality in the army, where vaccination was rigidly enforced, was practically *nil*.

During the period of thirty years just before the introduction of vaccine in the province of Trieste, the deaths from smallpox alone were 14,000 per 1,000,000 of inhabitants, and only 182 during the period of two years which followed the practice of vaccination.

Mental and Physical Rest.

We must recognize two kinds of rest: (1) rest as a means of restoration to health when sick, and (2) rest as a means of restoring vigor that is merely tired from close work. In the former case it may be necessary that rest may mean inaction, on the broad of the back, in bed, if so advised by the physician; in the latter case, rest does not mean inertia, but rather pleasurable and varied activity, as so well expressed by Dr. Egbert Guernsey in the following words: "Mental and physical rest is best obtained not by that inertia of the mind which shuts out thought and makes life a kind of vegetative existence, but the throwing wide open the vestibule of the mind so that it can receive and comment upon scenes and events as they pass in almost endless succession, each suggestive of a thought, a scientific or historical fact, or bringing out into clear light from the storehouse of the memory recollections of incidents and facts from the world of literature and art and science from a lifetime of reading, of observation and comment. In that lazy life every person one meets and every passing event to one determined to be happy, gives something of zest to life and makes the hours pass pleasantly. Of course the surroundings should be pleasant, the company agreeable, the air pure and the water good; and with all these, on the farm, by the seashore, or among the hills and mountains, the man, woman or child must be hard to please who does not find in a summer outing rest, pleasure, mental and physical strength."

Long Skirts as Disseminators of Disease.

Recent instructions issued by the chief of the Viennese police, says a journal of that city, have reference to the inconvenient length of ladies' trains, as worn in the streets of the Austrian capital. On general grounds, the public, we may rest assured, will not object to restrictions on these cumbrous and obstructive appendages. Taste, if it has (as we have always understood) a close connection with neatness, will also be gratified by this protest on behalf of simple dress. Health, which is equally concerned with personal cleanliness, will be sensible of a sanitary gain. But the police have even more in view. The flowing skirts, they contend, have a possible influence on the spread of contagion by the dust they raise.

Ether-drinking in Norway.

We learn from *Sundhetsbladet*, a Norwegian health journal published in Christiania, that with the falling off in the consumption of alcoholic intoxicants, ether-drinking is becoming quite common in certain districts. The farmers buy it in considerable quantities, especially at Christmas time and on other festive occasions, and they treat each other and get drunk in the same way that they formerly did on potato or barley brandy. It is said to be drunk by young and old, men and women, in the palatial homes of the wealthy and the miserable hovels of the poor. We had supposed, says the *N. Y. Medical Times*, that ether-drinking was almost wholly confined to Ireland, in certain parts of which it has long been a national vice, and we were hardly prepared to hear that it had enslaved the stern and hardy dweller in the land of the midnight sun.

Fruits.

Ueber Land und Meer discourses very pleasantly of fruit as an article of diet, says the *N. Y. Med. Times*, claiming that it contributes but little to the support of the system, but a great deal toward its maintenance in health. As a general thing fruit contains little more than sugar and organic salts, the acidity giving them their characteristic taste and special aroma. The gelatinizing substance of fruit jellies is pectine, albumen and proteids, and the substance which enters into the structure of the animal organism is insignificant in quantity. There is as much albumen in an egg as in a pound of cherries, eighteen ounces of plums, two and a quarter pounds of apples or four pounds of pears. The flavor varies with the proportion of sugar, acid, gum and pectine. The last substance holds the acid concealed so that it is scarcely appreciable by the nerves of taste. The flavor of fruit depends further on the relation between its soluble and insoluble substances. To this is due the pleasant sensation we experience in the mouth when we eat fruit. The peach and the plum dissolve on the tongue because they are comparatively deficient in insoluble pectose and cellulose. Some people are very sensitive to fruit acids and cannot indulge without being troubled with sores on the lips. It has been remarked that calculus is very rare in cider districts. Potash is secreted in the organism of the cider-drinker, and acts on lime secretions like vichy water.

The Influence of Moderate Drinking on Health.

Under the title of the "Influence of Nipping upon Health," Dr. Harley discusses, in the *Provincial Medical Journal*, the injurious effects of drinking alcoholic beverages in moderation. He says that the majority of men are moderate drinkers, and, as a consequence, most of one's patients belong to this class. Comparing the mortality tables of men exposed to the temptation of frequent nipping with those of men not similarly exposed, the result is startling in the extreme, more particularly as regards the proportion of liver diseases. For it would appear that the rate of mortality is six times greater among those whose business is practically inseparable from nipping than among those representing all the other industries together.

Gymnastics.

A physician writing in the *St. Louis Magazine* very truly says that an immense amount of energy is wasted in gymnasiums that might be much more profitably employed. Gymnastics are now a fad. Young ladies attend gymnastic classes while their mothers do the work of the kitchen. Young men develop their muscle at the "gym" while the old man saws the wood. There is a wonderful amount of exercise of just the right kind to be got out of a broom in the hands of the average young lady. The clerk can always obtain the proper amount of exercise doing odd jobs about the house and garden. Like everything else, the gymnastic business is in danger of being overdone. Useful labor equally healthy in its character is neglected, and the exercise is taken at a gymnasium. Of course such remarks *do not* apply to systematic gymnastics under the guidance of an intelligent and competent instructor.

Stamping Out Smallpox.

Dr. J. M. Boyles, City Health Officer of Houston, Tex., relates in the *Abstract of Sanitary Reports* an instructive history of an epidemic of smallpox in that city. On December 4, 1890, a circus arrived in Houston with a case of smallpox which was kept concealed until after the circus had left several days. On December 21, smallpox made its appearance in several parts of the city simultaneously—in hotels, boarding-houses, etc. In less than five days there were forty-one cases, mostly white. How many persons had been exposed at this time cannot be estimated. At the suggestion of the Health Officer the City Council made vaccination compulsory. The house-to-house plan was adopted. Of the 21,000 persons vaccinated there was no bad effect—no amputations or deaths. Some suffered for several weeks with sore arms. In forty days Dr. Boyles succeeded in getting the disease under control. Of the 349 cases no one contracted the disease that had been vaccinated under eleven years. Some vaccinated forty-nine years ago had varioloid, but of such a mild type it was not necessary to go to bed. There were 120 in the quarantine hospital that had been vaccinated and were exposed who did not take the disease.

Cremation of Garbage.

This subject just now is attracting much attention in Memphis and Nashville as well as many cities throughout the country, says the *Tennessee State Board of Health Bulletin*. In the "Third Annual Report of the Department of Public Safety," Pittsburg, 1890, we find very emphatic testimony in its favor. "The garbage furnace is situated on Hill Street, in the Sixth Ward. This furnace has been in operation constantly during the past three years. . . . The present furnace destroys almost if not all the garbage from all the wards in the lower and central parts of the city. This furnace has certainly demonstrated the fact that cremation is the proper method by which to dispose of garbage. Each year we have been adding improvements to the furnace, so that at present it has but very few objectionable features, and is in first-class condition."

Pittsburg is so well satisfied with the above experiment that a second furnace for the East End is ordered, and another recommended for the South Side.

Do Not Worry.

The burden of the song of all old persons is "Do not worry," and Mrs. Catharine Sharp, of this city, who is now "very much alive" in her 114th year, is no exception to this general rule. Of course, there are many factors in the promotion of longevity, but one of the most important is the cultivation of a happy, equable temperament that will cause its possessor to realize that, since there is nothing to be gained by worry, there is no use in worrying.



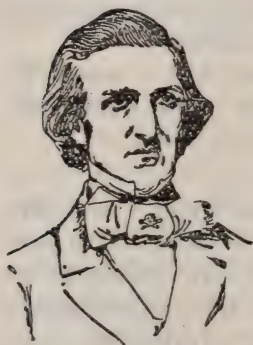
MRS. SHARP, IN HER 114TH YEAR.

When a newspaper reporter recently interviewed Mrs. Sharp as to what, in her opinion, had contributed to keep her so long alive, he was met with the following reply: "I guess the reason I have lived so long and have such good health now is because I never worried about anything in my life. If I didn't have anything I didn't worry about it. I was always of a cheerful disposition.

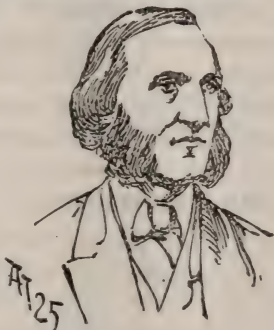
All our family have been the same. I was never sick a day in my life. I may have had headaches sometimes, but I don't remember. I was never rich. Perhaps that had something to do with it. I don't look so very old now, do I?"

Growing Old Gracefully.

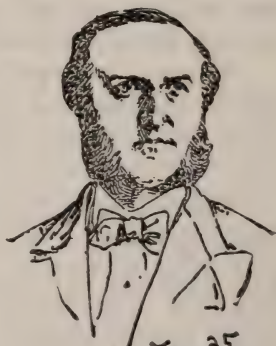
If there is one man of national prominence more likely than another to *evolute*, so to speak, into old age, that man is the Hon. Chauncey M. Depew, of New York city. Endowed with wealth to gratify every wish and with an equability of disposition and a happiness of spirit that have given him a world-



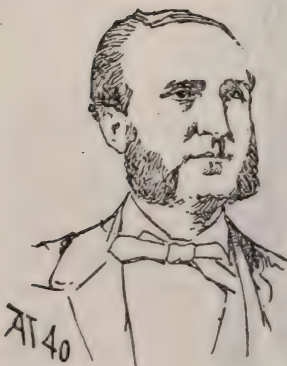
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AT 25



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AT 40



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wide reputation, he might well be selected as a type of healthy, natural progress through life.

If one studies the appearance presented by Mr. Depew at various ages, from a youth of twenty to his present age of fifty-six, he will note how natural and how gradual has been the transition. This is as it should be and as it will be to all who live as they should.

Time Occupied by a Telegram.

A large company of telegraphers recently met in San Francisco to celebrate the opening of a new telegraph office. After showing the instruments, the superintendent said that he had often been asked how long it took to telegraph to different places and get a reply, and he proposed to answer the question then by actual demonstration. He thereupon wired an inquiry as to the weather to Portland, New York, Washington, Seattle, Tacoma, Canso (Nova Scotia) and London. The first reply came from Portland in three minutes, "Weather fine;" the next from New York in three minutes ten seconds, "Misty and warm;" Washington in three minutes eleven seconds, "Misty and warm;" Seattle in three minutes twenty-one seconds, "Misty and calm;" Tacoma in three minutes twenty-eight seconds, "Misty, cool and calm;" Canso (Nova Scotia) in four minutes twenty seconds, "Cold and misty;" and the reply, "Misty and cold," came from far-off London in six minutes twenty-two seconds.

Gout and Fruit-eating.

In the last number of his *Archives of Surgery*, Mr. Jonathan Hutchinson says that he has for many years been in the habit of forbidding fruit to all patients who suffer from tendency to gout. In every instance in which a total abstainer of long standing has come under his observation for any affection relating to gout he has found, on inquiry, that the sufferer was a liberal fruit-eater. Fruits are, of course, by no means, all equally deleterious; cooked fruits, especially if eaten hot with added sugar, are the most injurious; the addition of cane to grape sugar adds much to the risk of disagreement. Fruit eaten raw, and without the addition of sugar, would appear to be comparatively safe. Natural instinct and dietetic tastes have already led the way in this direction; few wine-drinkers take fruit or sweets to any extent, and Mr. Hutchinson suggests as a dietetic law that alcohol and fruit sugar ought never to be taken together, and he believes that the children of those who, in former generations, have established a gouty constitution may, although themselves water-drinkers, excite active gout by the use of fruit and sugar.

Isolation.

The first and most important step to take against contagious diseases is isolation. It is the most certain and direct way of preventing them from spreading; therefore, the isolation of contagious patients is to-day universally recognized as of absolute necessity and a most binding obligation whenever any contagious disease breaks out in a family. To be properly isolated, the patient should be put on the topmost flat of the house in a large, well-ventilated room, with plenty of sunlight. All carpets, curtains, articles of dress, useless furniture and other unnecessary things, should have been previously removed from the room. The nurse should wear cotton in preference to woolen clothing, so that it can be more easily washed. All discharges from the throat, mouth or nose are

received on rags, which are immediately burned, or into a vessel containing a disinfecting solution. The discharges from the bowels are received into a vessel containing a disinfectant. Clothing, towels, bed-linen, etc., which have been used by the patient, are immediately, and previous to their being taken out of the room, thrown into a bucket or tub containing a disinfecting solution. The isolation of the patient and nurse is continued until their disinfection.—*Province of Quebec Regulations.*

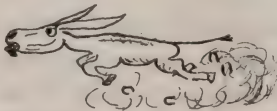
Hygeia and the Mule.



pleased to term the "Dark Ages." The mule stood firm, the Goddess was delayed, and disease and death, plagues and pestilences ravaged the world.



The mule stood so long that he became fixed to the spot. But, with the advent of the nineteenth century, "Common Sense," coming to be recognized as an attribute of humanity, and as a powerful factor in human progress, her assistance was invoked by the Goddess Hygeia, with the result, as depicted, that the triumphal car proceeds quietly on its journey, while the mule, in unavailing passion, "kicks himself to pieces." There is a moral in this little fable for those who, lacking in "common sense," would mulishly endeavor to obstruct the onward course of the popular appreciation of the science of hygiene.



To detect the presence of arsenic in wall paper, put some hydrochloric acid, a piece of copper wire and a bit of the wall paper to be examined together in a test tube, which then should be gently heated. If the paper contains arsenic the wire will be blackened.

Back Numbers Wanted.

To Our Subscribers:

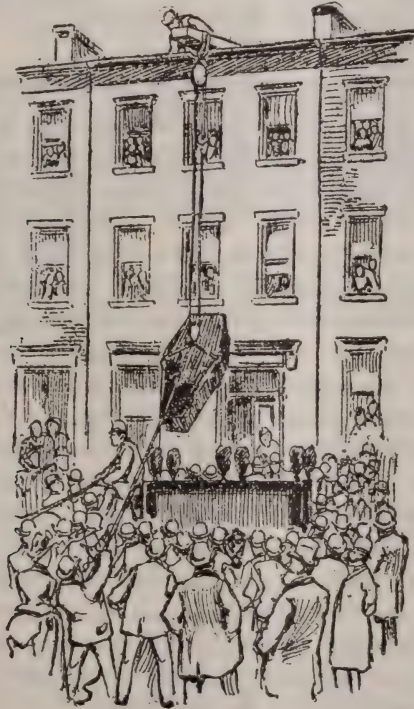
There has been such a steady demand for the back numbers of THE ANNALS OF HYGIENE from the new subscribers who, appreciating the practical information given in its pages, wish to get it from the very beginning, that our files have run low, and in some cases are completely exhausted. Therefore, that none may be disappointed, we are prepared to buy back a limited number at one-third advance on price paid us, or twenty-five cents per copy; but in all cases we desire a postal card sent us, notifying us of issue offered for sale, and will not accept any sent us without such notification, and an order from us to send.

The issues desired are: September, December, 1884; January, February, March, April, May, June, September, November, 1886; February, 1887; December, 1889.

A Huge Corpse.

There died recently, in New York city, a woman who was over six feet tall and weighed nearly 400 pounds.

The coffin had to be made to order. It measured twenty inches in height,



three feet wide, and six feet six inches long. The doors of the house were not wide enough to admit of its passage, and steeple builders were engaged to remove the corpse by the window. This was accomplished by removing the

sashes, leaving only one-eighth of an inch to spare. It required the united efforts of eight men to place the body in the coffin, and five men and an improvised derrick on the roof to lower it to the ground.

Duration of Life.

An eminent German statistician, says *The Insurance Agent*, has lately given the following as facts in regard to longevity: The average duration is 37 years. One-fourth the population dies before attaining the seventeenth year. Of 1,000 persons only one reaches the age of 100 years, and six that of 65 years; 35,214,000 die every year; 96,480 every day; 4,020 every hour; 67 every minute. The births amount to 36,792,000 every year; 100,800 every day; 4,200 every hour; 70 every minute. Married people live longer than the unmarried, and civilized nations longer than the uncivilized. Tall persons enjoy a greater longevity than small ones. Women have a more favorable chance of life before reaching their fiftieth year than men, but a less favorable one after that period. The proportion of married persons to single ones is as 75 to 1,000. Persons born in spring have more robust constitutions than those born at any other season. Births and deaths occur more frequently at night than in the daytime. It may finally be added that only one-fourth of the male inhabitants of the globe grow up to carry arms or perform military service.

The Onward March of Hygiene.

Slow, it is true, seems the progress toward that hygeian condition when all mankind will be ashamed to be dirty and sick, and will live with the scrupulous hygeian care we read of in the Levitical laws of the renowned Moses (says the *Canada Health Journal*). But the dark age has passed—the age when the “saints” gloried in dirt, when indeed a filthy body was a fetich, when nine out of ten human beings sometimes died by a pestilence, and poverty, intemperance and crime were rampant. Fifty years have brought a wonderful change; a decade has even done likewise. So recently as in 1859, ex-President White of Cornell University witnessed in the Cathedral of Naples, a city then noted for filth, appeals to fetish against pestilence (*Popular Science Monthly*, August, 1891). Yet now, Italy is blessed with what is probably the most complete public health system in the world. The words attributed to John Wesley, that “Cleanliness is next akin to godliness” (this journal always contending, further, that cleanliness is a part of godliness), seems to be having its desired effect. Great sanitary progress has been made in most European countries and even in the United States; and two or three of our provinces have made a beginning, although political influences are checking good progress. Canada as a Dominion has done nothing, comparatively, although there is reason to hope for a beginning in the near future.

BERLIN gives the carriages of physicians the right of way through the crowded streets. The coachmen wear a distinctive white hat.

President Harrison's Outing.

Whether it is because he is a subscriber to the *THE ANNALS* or not, we will not say, but the fact is that E. C. Knight, who is much older than most old persons who are in their graves, yet who is an active sportsman, has been a regular reader of this journal for a number of years.



Samuel B. Knight.
E. C. Knight.

Ex-Senator W. J. Sewell.
PRESIDENT HARRISON.

Col. R. Dale Benson.
Edward S. Clark.

There is one fact that should be noted about the great majority of the most eminent men of all countries and of all time: they all firmly believed in the truth of the saying that "All work and no play makes Jack a dull boy." The man who is too busy to find time for recreation had better die at once, for his labor will soon kill him anyhow, and his life will have been lived without any real pleasure to himself or benefit to others.

In a recent address, Dr. T. Gaillard Thomas said: "Were I offered to-day by some great power the accomplishment of one wish, I think I would select the destruction of the process by which alcohol is created. Putting advantages and disadvantages into mental scales, I would select as the wish nestling closest to my heart the abolition of alcohol."

Superfluous Eating.

Growth and waste and repair go on in a nearly uniform way the whole year through, but the amount of food necessary for these operations or purposes is surprisingly small, remarks the *British Medical Journal*. The generation of bodily heat requires a most variable quantity of food. In winter, with the temperature of the external air at zero, the temperature of the blood in healthy persons is 98.3 degrees, and when the heat of summer drives the mercury of the thermometer nearer to or above that mark, the blood still registers 98.3 degrees. The marvelous mechanism by which this uniform blood temperature is maintained at all seasons is not necessary to consider ; but it must be evident to everyone that the force needed to raise the temperature of the whole body to nearly one hundred degrees in winter is no longer needed in summer. The total amount of food needed for repair, for growth and for heating, physiology teaches us, is much less than is generally imagined, and it impresses us with the truth of the great surgeon Albernethy's saying, that "one-fourth of what we eat keeps us, and the other three-fourths we keep at the peril of our lives." In winter, we burn up the surplus food with a limited amount of extra exertion. In summer we get rid of it literally at some extra risk to health and, of course, to life. We cannot burn it. Our vital furnaces are banked, and we worry the most important working organs with the extra exertion of removing what would better never have been taken into the stomach.

An Early Proof of the Value of Vaccination.

A correspondent of the *British Medical Journal* sends to it the following extract from a French newspaper of October 3, 1804: "Six black children, the first who had ever been vaccinated at the island of Réunion, and from whom 5,000 people were vaccinated, were shipped on board the vessel *Jeune Caroline*, bound for one of the Seychelles Islands to perform quarantine for smallpox. The six children were three months on board the ship, eating, drinking and sleeping with the sick ; during the time of quarantine they were inoculated with the virus taken from the pustules of the diseased passengers, by large incisions made in both arms. From the report made at the time and communicated to the Central Society of Vaccine by the Minister of the Home Department, it was found that, although these six children had slept under the same blankets, and in contact with the pustules of the sick, eating and drinking out of the same vessels, and having been inoculated with pus from the patients who ultimately died of the disease, they were all preserved from the contagion, and were, during the whole time, in perfect health. The proof and counter-proof is one of the most severe tests ever performed, and ought to have a marked place in the history of vaccination. The fact of six children having lived in perfect health on board a small ship infected with smallpox, having on board twenty blacks with confluent smallpox—six of whom died—twenty to twenty-five others with dry crusts all over the body, with seven deaths before their arrival at the quarantine station, all packed in a small space between decks, is perhaps the most crucial ever witnessed of preservation by vaccination."

Navigation and Hygiene.

According to the report of the National Board of Steam Navigation, while 5,000,000 persons were carried, last year, on American waters and from American ports, only sixty-five were lost. Yet people fear the water. This seemingly incredibly small casualty record is, undoubtedly, due to the efficient safeguards against the dangers of water-travel that have been the logical outgrowth of the appreciation of the perils thereof. Does it not seem strange that we are not equally ready to institute precautions against disease when we know that they would be equally effective? For the reason of this indifference we must remember that, while a "Board" (a body of men) may frame and *enforce* efficient precautions against the dangers of navigation, it requires *nearly universal* co-operation in order that precautions against disease may be effective; and since human beings are, by nature, rather indifferent to their physical welfare, it requires a constant effort of instruction and urging that this co-operation may be, in a measure, secured.

The Food Inspectors of New York.

If you would become acquainted with a unique phase of city life, showing a great source of food supply for "the other half," about which so little is known, take a stroll some Saturday evening down Ninth Avenue from Forty-second street, says the *New York Herald*.

You will notice innumerable venders' wagons, each lighted by flaming torches, a busy, hustling, motley crowd of humanity in eager search for "bargains" in the way of meat, fish, fruit and vegetables.

This is the great open-air market of the west side tenement district. It is not so much quality as quantity which strikes the fancy of those who patronize these wagons.

The City Board of Health takes a particular interest in these sales. There are inspectors of fish, meat and fruit who bestir themselves occasionally to see that nothing is sold which is dangerous to human life.

Health Inspectors John Moran and B. C. Fuller, accompanied by a squad of sanitary police, visited this locality recently. The drizzling, drenching rain made but little difference to the crowd of anxious buyers.

"Here," said Mr. Moran, going up to one wagon, "what's this?"

"Veal, sir."

"Veal, eh?" said Mr. Moran, turning several pieces over for inspection. "Well, it's almost bad enough to condemn. You want to get rid of it to-night or throw it away, you hear?"

"Yes, sir," meekly responded the individual addressed, and then he cried out lustily, "Finest veal in the market, eight cents a pound."

"Here you are," yelled the next vender, "chickens only six cents a pound. Fine Philadelphia chickens at twenty-five cents a piece."

"That's a rather shaky-looking lot of chickens," I remarked.

"Oh, they're not so bad," replied Mr. Fuller. "They're a lot that have

been held over on cold storage. Must be gotten rid of somehow, and the wholesale men have had to let them go at a sacrifice. These fellows," he went on, "buy most of their stuff late on Saturday afternoons, when there is a general clean-up by the down-town wholesale men. The latter will take almost any price rather than hold the stuff over Sunday."

"Why," broke in Mr. Moran, "there was a man selling turkeys here last Saturday night at fifteen cents a piece, or two for a quarter. Good-sized ones, too. Just think of that. I don't know how many had been sold before I had the men arrested, but the turkeys were fairly green, they were so putrid."

"And will these people buy such stuff?" I asked.

"Indeed, they will," said he. "They make it into stews, and the cheap restaurants and boarding-houses buy it and fix it up so that it will not be noticed."



"Here," remarked Mr. Fuller, as we passed one wagon, where a weazen-faced old woman was ladling out some strange-looking, glutinous stuff. "This woman," he went on, "goes about buying up all the cracked and spotted eggs she can find. She breaks them into a large milk-can, and ——"

"Fine fresh eggs, only twelve cents a quart," interrupted the old dame, seeing in us possible customers.

"You never could tell those things in an omelet," said Mr. Fuller. "Sometimes we seize a couple of tons of tainted meats and rotten fruit in a single evening. All of this condemned stuff is dumped on the scows at the foot of West Thirty-seventh Street. Makes a good fertilizer, too, I tell you."

Several lots of rotten fruits and vegetables were seized and condemned.

"Come up this way some night in the summer, and I'll show you something that lays this away in the shade," said Mr. Fuller.

Poisoning by Arsenical Colors.

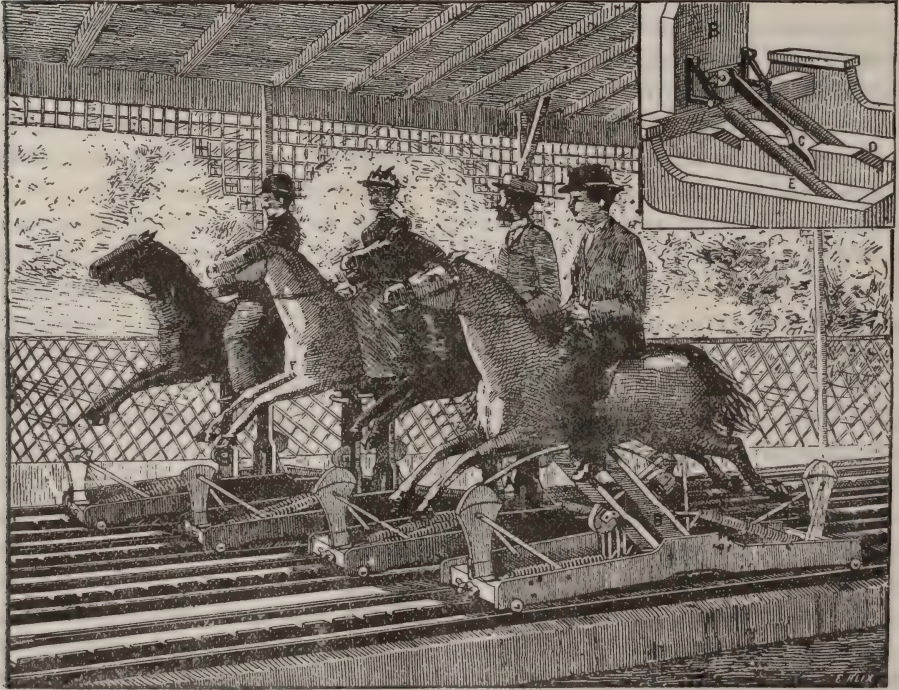
It is asserted in a recent number of the *British Bee Journal* that Mr. Clement, a bee-keeper, of Warburton, Sussex, died recently from the effects of arsenical poisoning due to the use of a bright crimson drugget containing arsenic, which had been put down in his house some two years ago. Nothing could be said against the sanitary condition of the premises, and after the drugget had been for some time in the house, illness occurred among the inmates, who, however, recovered when absent from home. It seems to have been assumed that the poisonous effects were due to the presence of an aniline dye containing the small proportion of arsenic which may have been left as an impurity after the production of the dye. It is not generally known that cases of arsenical poisoning due to the use of materials dyed with aniline dyes are not so much caused by the fact that arsenic had been used in producing the dye—a process by no means necessary, although still employed by some manufacturers, as, for example, in the method of producing rose aniline by the use of arsenic acid as an oxidizing agent—as by the fact that arsenical compounds are largely used as mordants to fix the dye upon the material. It is obvious that this proceeding may cause the presence of a much larger quantity of arsenic in any given portion of material than would result from the presence of arsenic as an impurity in the dye used. A case in point has been recently described by a London public analyst. A lady had purchased from a well-known West End establishment several yards of a light, flimsy printed material of the kind now so much employed for curtains and other household decoration. While working at this material both the lady and her maid began to suffer from symptoms of arsenical poisoning. The substance was found by the analyst to contain very large quantities of arsenic, a compound of which had obviously been used for the purpose of fixing the colored printed pattern. Legislation, whereby the venders of materials of this kind could be dealt with in the same way as persons who sell adulterated goods, is urgently needed. At present there exists absolutely no restriction upon such sales, and enormous amounts of poisonous material may be distributed with impunity.—*British Medical Journal*.

Hygienic Horses.

Everyone knows of the rocking horses (says a French exchange) which for some years past have constituted one of the great attractions of country festivals. The Paris garden has for some days past been offering a new source of amusement based upon the same principle, but in which the horses, instead of remaining in place, roll upon rails, thus adding a new element of success to the combination, since, owing to this improvement, one can have the treat of a true horse race that has nothing in common, as regards rapidity, with the races of Longchamps, but in which it is the most skillful that will triumph. The detail figured in the right-hand corner of the engraving shows how the system

operates. One of the rails is formed of a flat iron, and the corresponding wheels have channels which fit into it perfectly. The other rail, on the contrary, is V-shaped, and the wheels that engage with it are simply rollers. As a consequence of the rocking motion of the horse on the support, B, the carriage, rolls to a certain extent upon the rails, carrying along the ratchet, C, which slides along a rack, D, placed between the rails.

If the impetus has been sufficient to make the ratchet advance the distance



comprised between two teeth, its extremity, engaging with another tooth, prevents the system from moving backward in the rocking motion in the opposite direction, but if this result fails, the horse simply returns to the starting point.

It is thought that owing to this little artifice the sport will assume some interest, and that people will soon be, if they are not already, betting heavily on these singular racers.

THE population of France, according to the official census, is 38,095,150, an increase of only 208,584 since the previous census.

SPECIAL REPORTS.

State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania.

PRESIDENT,

J. H. McCLELLAND, M.D., of Pittsburg.

SECRETARY,

BENJAMIN LEE, M.D., of Philadelphia.

PEMBERTON DUDLEY, M.D., of Philadelphia.

J. F. EDWARDS, M.D., of Philadelphia.

GEORGE G. GROFF, M.D., of Lewisburg.

J. H. McCLELLAND, M.D., of Pittsburg.

S. T. DAVIS, M.D., of Lancaster.

HOWARD MURPHY, C.E., of Philadelphia.

BENJAMIN LEE, M.D., of Philadelphia.

PLACE OF MEETING,

Supreme Court Room, State Capitol, Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Thursday in May, July and November.

Meeting of the Michigan State Board of Health.

The members present at the meeting of the State Board of Health, at Lansing, October 13, 1891, were Prof. Vaughan, Prof. Fall, Dr. Gray, Mr. Wells and Dr. Baker.

The Secretary presented letters from the Mayor and others, and a numerous signed petition from citizens of Iron Mountain, setting forth that their city is suffering from a serious epidemic of typhoid fever; 436 cases and 32 deaths from typhoid fever having occurred from August 7 to October 6, 1891, and asking that the State Board hold a sanitary convention there, for the purpose of aiding the citizens in stamping out the epidemic, and stating that Iron Mountain had raised \$250 for defraying the expenses of such convention. Although petitions for conventions at Holland and at Charlotte had precedence of this one, on account of the very serious situation at Iron Mountain, the Board decided to accept the invitation and hold a convention there October 30 and 31.

The Board also appointed a committee to investigate an outbreak of diphtheria at Inlay City and vicinity, from which upward of 70 cases and 14 deaths are reported to have occurred since August, 1890.

The Secretary presented a report of typhoid fever in Deerfield Township, where about 26 cases and 7 deaths have been reported since August 20, 1891.

Correspondence relative to a suspected case of leprosy in Michigan was presented, as were also the reported casualties from kerosene oil during the past quarter.

In his report of work done during the quarter, the Secretary mentioned that the office had received notice of and taken action relative to 492 outbreaks of dangerous communicable diseases during the quarter, and 1,120 letters had been written.

Dr. Baker stated that, although the statistics show that through health measures—chiefly isolation, disinfection and vaccination—there has been recently a reduction of at

least 1,100 deaths per year in Michigan from the three diseases—smallpox, scarlet fever and diphtheria—there still remained 7,000 deaths per year from diseases known to be preventable through measures the knowledge of which is being spread by the State Board of Health. He thought that an increase of the same work, which has contributed to cause the reduction, would be the most profitable use to which the people of Michigan could put a few thousand dollars, and that a further reduction in the deaths can be made by the constant employment of more persons in health work, one or two of whom could be employed by the State to good advantage.

Prof. Vaughan spoke of one line of work which seemed to be specially needed, an inspector to visit and aid localities to stop dangerous contagious diseases. Typhoid fever and diphtheria are epidemic in places too numerous to be visited by members of this Board, who, if they go, must leave their own business to work for the public without compensation. Something is being done now, but more ought to be done than can be done by members of the Board.

Annual Convention of the Teachers of Physical Training of the North American (Turnerbund) Gymnastic Union.

Held in Philadelphia, August 5, 6 and 7, 1891.

The meetings were held in the hall of the Philadelphia (Pa.) Turngemeinde. The convention was attended by about sixty teachers from the different parts of the United States.

Mr. Henry Braun, of St. Louis, Mo., Chairman of the National Technical Committee, called the convention to order at 9 o'clock A.M., and, in a brief speech, stated the object of the meeting.

The following officers were then chosen: Chairman, Mr. Hy. Tudor, of Chicago, Ill.; Vice-Chairman, Mr. Kari Zapp, of Cleveland, O.; Secretary, Mr. Hy. Hartung, of Chicago, Ill.; Assistant Secretary, Mr. Ferdinand Krogh, of Wheeling, W. Va. Upon motion, a committee, embracing Messrs. Wm. Fleck and Karl Stahl, of New York city, and Wm. A. Stecher, of St. Louis, Mo., was appointed by the Chairman to arrange and report upon the order of proceedings of each day. After a short recess, during which the members present enrolled themselves, the Committee on the Order of Business reported, and their plan was carried out as follows:

Mr. Henry Hartung, of Chicago, read a lengthy paper, entitled "The Changes brought about in Gymnastics by its Introduction into the Public Schools." He enlarged upon the system, showing its importance, and expressing the thought that gymnastics would in time become a part in the regular course of all public schools. The need of training children physically, as well as mentally, he maintained, is surely apparent; and when the system now in vogue to a certain extent in schools in the larger cities is broadened and enlarged, as well as introduced in smaller places, the gain will be manifest. The Turnerbund will be called upon to produce the teachers required to meet increased demands for physical culture; and, while its benefits will thus be thrown beyond the circle of its own members, the cause is such as should meet with its hearty support.

The subject discussed by Mr. Hartung brought on the question, "Is a course of one year sufficient for the student at our Teachers' Seminary?" and this topic was ventilated by Mr. K. Sutterle, of Cleveland, who maintained that the present term was not long enough to render the students thoroughly fitted for instructors; that it should be extended to two years, and that the Turnerbund ought to willingly bear the additional expense that would be thus incurred, in view of the results to be attained therefrom. The question was freely debated. This was followed by the adoption of a motion that the present system should continue, but that all applicants for admission to the Teachers' Seminary at Milwaukee be subjected to a more rigid examination, previous to entering, than heretofore.

Previous to adjourning, a number of letters of regret at not being able to be present, sent from various parts of the States, also one from Switzerland, were read.

In the afternoon a paper on "The Summer School for Physical Training at Harvard University," was presented by Mr. William A. Stecher, of St. Louis, Mo., who pursued a course of physical training there under Dr. Dudley A. Sargent. He described the course taken, the manner of arranging and conducting the practical work, the lectures, etc., comparing the results obtained with those of the normal school of the Gymnastic Union, at Milwaukee.

The paper culminated in stating that in all the practical work the results of the Union's normal school were far in advance of those of the summer school (the short session of six weeks partly accounting for that), but that the lectures, especially those of Dr. Sargent, were very good. Mr. Stecher recommended that the course in the Union's normal school be improved by the introduction of more lectures than those delivered at present. The paper was freely discussed.

Mr. George Seikel, of Newark, N. J., read a criticism of an essay, by Dr. E. Meyer, on the "Physical Education of the Youth," opposing the writer's arguments. The doctor, a zealous advocate of physical training, had, in his essay, favored the introduction of the Swedish gymnastics into the public schools of his native town, at the same time criticising the German system. Mr. Seikel showed that the criticisms of the doctor did not refer to the German system as such, but were only enumerations of outgrowths and of conditions to be found where no competent teacher was at the head of a school. He further showed that the German system of gymnastics was so rich in its various branches of school, military, society and medical gymnastics, and also in field sports, games and so on, as to offer to all conditions of people advantages for physical training that no other system can boast of.

After a lengthy discussion a motion was carried, declaring "that the German system of physical training, if rightly conducted by an experienced teacher, offered all the advantages of a successful system of gymnastics."

Mr. Karl Zapp, of Cleveland, O., discoursed on the question, "How are the coteries of younger men of our societies to be instructed so that they may become useful and proficient later on?" Succeeding this, the delegates proceeded to a lower hall, and witnessed an exhibition of calisthenics, marching, exercises with apparatus, high jumping and climbing, in which a class of the Philadelphia Turngemeinde displayed agility, under the direction of Mr. Richard Pertuch, instructor of these branches.

In the evening a convention of the Teachers' Association of the United States, embracing members of the Turnerbund, was held, at which Mr. Wm. Fleck, of New York city, presided; Mr. E. Guenther, of Allegheny, acted as Secretary; and Mr. Richard Pertuch, of Philadelphia, Pa., was Treasurer. The object of this association is mutual improvement of its members. There were 43 members, or more than half of the full number, in attendance in the evening.

Sessions of Thursday, August 6.

Additional delegates were present when the session was opened at 9 o'clock by the Chairman. Mr. Henry Suder, of Chicago, Ill., read this first paper at the session, on "How to Teach Young Men to Lead Classes of Active Turners and be Assistant Instructors in Physical Culture." The writer treated this question in its different bearings, discussing also a number of new methods for the training of the muscles in youths. He thought that a uniform system ought to be adopted, regulating the teaching, so as to secure the best results to the students. Then a discussion followed on the views there set forth, most of the speakers agreeing with Mr. Suder, but not action was taken thereon.

A paper was read by Mr. Suetterle, of Cleveland, O., on "Boxing in the Gymnasium." He maintained that boxing was not an exercise to be deprecated, but to be encouraged as healthful. He showed what development the muscles are thereby afforded, and explained the various ways of action and attack. He did not consider boxing as degrading. Because some men have lowered it by brutal performances in prize rings was no reason against its

advantages. Such men would be as like to show their pugnacious instincts and allow full swing to their temper as well out as in prize rings.

Mr. Suetterle's arguments provoked a lengthy talk, some of the speakers maintaining that boxing ought to be taught to men at the gymnasia, but under restrictions that would avoid any objectionable consequences. On the other side, it was asserted that boxing was dangerous, often culminating in evil results. It was ungentlemanly, and had not been proved, beyond doubt, to be beneficial. The same might apply, in a measure, to wrestling. There were numerous other ways of bringing about muscular development, such as by the use of different appliances, which were alluded to, without any need to resort to such a system as was based upon the "Marquis of Queensbury" rules.

Notwithstanding the latter arguments, a motion was passed that boxing be taught at the various gymnastic schools of the Turnerbund, without compelling, however, any student to pursue it should he not wish to do so.

It was reported that a certain company holding land in Florida had offered the Turnerbund 20 acres at Gotha, in that State, and that it was proposed to establish there a Home for veterans of the Gymnastic Union. After some discussion this offer was accepted and referred to a committee, to report upon at another session.

Afternoon Session.

Upon reassembling, a paper, entitled "Main Features to be observed in the Arrangement of National Tournaments and the Equipment of Pastime Parks and Gymnasium Fields or Campuses," was presented by Mr. Karl Zapp, of Cleveland. The present system was favored in this regard, but several improvements were suggested, and these had the approval of the members. Mr. Richard Pertuch, of Philadelphia, Pa., discussed this object: "Whether it is advisable to dispense with the running tracks and jumping boards at the out-of-door exercises." He did not think it was advisable to do so at present, and in this view there was a general concurrence. Mr. Pertuch also argued upon the question, "Is it necessary to alter the system heretofore in vogue with the judges of the national tournament," and he held out a number of suggestions on this point with a view to better decisions.

Sessions of Friday, August 7.

The session was called to order at 9 o'clock. Mr. William Reuter, of Davenport, Iowa, read the first paper. He commented on the lack of uniformity and clearness in giving the commands for wand exercises. After explaining those used by him, he formed the delegates into a class in the gymnasium and then put his commands to a practical test.

Dr. Henry C. Boenning, Demonstrator of Anatomy at the University of Pennsylvania, followed in an address on the "Relation of the Muscles to Athletic Pastimes and Exercises and the Promotion of Hygiene."

Professor Boenning described the two sets of muscles of the human body—exterior and interior. Another classification of the muscles, the voluntary and involuntary, was also described. Two of the delegates served as models on which the different muscles and their actions were shown.

In the afternoon session rules and regulations were first considered, and various questions relating to practical work—gymnasium suits, bathing and so on—discussed. In the evening Mr. Richard Pertuch, of Philadelphia, read a paper on "Spinal Curvatures," and illustrated the same with lantern slides. He referred to the various curves and the means of treating some forms by special gymnasium work.

After a vote of thanks to the gentlemen who had prepared papers, the Philadelphia Turngemeinde and ladies, the press and the officers of the convention, the meeting adjourned *sine die*.

On the following Monday about forty members of the convention assembled at Atlantic City, N. J., to take a two-weeks' course in foil, rapier and broadsword fencing under the direction of Swordmaster George Heintz, of Annapolis, Md.

University of Pennsylvania.

LABORATORY OF HYGIENE.

October 1, 1891.

ANNOUNCEMENT OF OPENING AND COURSES OF INSTRUCTION.

Through the liberality of a number of citizens of Philadelphia, the University of Pennsylvania has been enabled to establish a Laboratory of Hygiene. A large building, specially planned and fitted for this purpose under the direction of Dr. John S. Billings, is now approaching completion, and will be completely equipped and ready for use on February 1, 1892. The building contains chemical and bacteriological laboratories, special research rooms for investigations upon air, water, food, soil, clothing, etc., workshops and photomicrographic rooms, and special arrangements for demonstrating the principles and practice of heating and ventilation, house-drainage, etc. The work of the Laboratory will be under the charge of Dr. John S. Billings, who has been appointed Director, and of skilled teachers in the several departments. Dr. A. C. Abbott, recently Assistant in Bacteriology and Hygiene in the Johns Hopkins Hospital in Baltimore, has been appointed First Assistant, and Dr. Albert A. Ghiskey, Assistant in Bacteriology, and others will be appointed as required.

The following courses of instruction have been established, and other special courses will be announced hereafter :

I. A COURSE IN PRACTICAL HYGIENE,

comprising lectures and practical work in the Laboratory upon the following subjects :

(1) Water. Physical, chemical and bacteriological investigation of water supplies; methods of obtaining samples; qualitative and quantitative analysis for impurities; collection, storage and purification of water intended for domestic use; effects of filters, aeration, etc.

(2) Disposal of refuse, cremation of garbage, etc.

(3) Sewage disposal, sewers, and house-drainage.

(4) Soils and building sites, physical, chemical and bacteriological investigations, soil-moisture, ground air.

(5) The atmosphere, climate and meteorological observations and records, chemical analysis, bacteriological investigation, methods of ventilation and heating.

(6) Foods—adulterations, milk and meat inspection.

(7) Clothing—microscopic examination, poisonous dyes.

(8) Lighting—gas, electricity, illuminating oils.

(9) Management of contagious diseases. Practical tests of different methods of disinfection, chemical and thermal; notification, isolation and quarantine.

(10) Vital statistics, registration and methods of tabulation.

(11) Offensive and dangerous trades.

(12) Sanitary jurisprudence, law of nuisances, duties of health officers, etc.

The foregoing course of instruction will begin Monday, February 1, 1892, and will occupy eight weeks, five days a week, from 9 A.M. to 12 M. The Laboratory will be open until 5 P.M. for those students in this course who wish to continue work in the afternoon. A special examination will be held at the end of the course for those students who wish to obtain a certificate of qualification to perform the duties of health officer.

Only those students who give evidence of fitness to profit by the course will be received. It is very desirable that students should have some practical knowledge of chemical manipulation and of the use of the microscope.

The rules of the Laboratory, as to order and discipline, must be observed, and the right is reserved to ask the withdrawal of any student who does not obey them.

The fee for this course will be \$50, payable in advance. A deposit of \$25 will also be required as a guarantee fund, from which will be paid the cost of apparatus broken or lost by the student. The necessary apparatus will be furnished free of charge, but must be receipted for, and any loss or damage made good. The ordinary chemicals will be furnished free of charge, but materials for bacteriological investigations must be purchased by the student. They can be obtained from the janitor of the Laboratory.

II. AN ELEMENTARY COURSE IN BACTERIOLOGY,

to commence on Monday, February 1, 1892, and continue eight weeks, five days a week. This course will cover the following subjects:

- (1) Apparatus employed—sterilizers, incubators, pressure regulators, thermostats, etc.
- (2) Culture media, methods of preparation, sterilization methods.
- (3) Microscopic characteristics of cultures of bacteria in general, and of special forms.
- (4) Methods of obtaining from mixtures of different bacteria individual species in pure cultures.
- (5) Microscopic technique. Use and care of instruments, staining from cultures, section cutting and staining and mounting of tissues.
- (6) Pathogenic bacteria, isolation, identification and inoculation.
- (7) Immunity, preventive inoculations and preparation of vaccines.
- (8) Disinfection, thermal and chemical, methods and apparatus, modes of testing efficiency.
- (9) Antisepsis and asepsis in surgery and obstetrics, preparation of dressings, instruments, operator and assistants, and of patients.
- (10) Bacteriological investigation of water.
- (11) Bacteriological investigation of air.
- (12) Bacteriological investigation of soil.

The fee for this course will be \$25, payable in advance.

An advanced course in Bacteriology will be given, commencing April 2, and continuing eight weeks, five days per week. It will include special researches adapted to each student.

The fee for this course will be \$25, payable in advance.

Applications for admission to any of the above courses should be addressed to Dr. A. C. ABBOTT, Laboratory of Hygiene, University of Pennsylvania, Philadelphia, Pa.

THE
ANNALS
OF
HYGIENE



VOLUME VI.
Philadelphia, December 1, 1891.
NUMBER 12.

COMMUNICATIONS.

Backward Curvature of the Spine.*

BY PROF. R. PERTUCH,
Of Philadelphia.

TO WALK erect is, or at least should be, the aim of everyone, and that it may be accomplished should be an ever-present thought. It is a solemn duty that devolves upon both parents and teachers to see to it that any deviation from the normal contour of the body should be at once appropriately corrected.

That such efforts may be successful, methodical physical training is necessary, and it would seem to be desirable and, from a hygienic point of view, even imperative that more attention should be given in our schools to this question of bodily development.

The school children of our day furnish the best proof of the necessity for such training, as the majority of them are afflicted with deformities, which are mainly caused by defective physical culture. I take the liberty of speaking of one of the most common deformities, viz., "backward curvature of the spine," which is usually the result of faulty habits, and I hope that my remarks will direct attention to this vital subject, and that more and more determined efforts will be made for the relief of this most detrimental habitual deformity. Backward curvature of the spine is recognizable by the constant drooping of the head forward inclination of the shoulders and the wing-like projection of the shoulder-blades. In this deformity the spinal column shows a backward curvature both at the cervical vertebræ (just below the back of the neck) and at the sternum or breast-bone beyond the normal.

Such a carriage (Fig. 1), acquired by habit, leads to neglect of the muscles of the spine and neck; this again causes a neglect of the platysma, mastoid and the pectoralis major, the former in case of contraction, the latter in case of expansion. Both sets of muscles must be brought into action by motion—the first especially by contraction, the others by expansion. Not until then can

* Abstract of a lecture delivered before the Turnlehrer Congress (Congress of Directors of Gymnastics) of the North American Turnerbund, and specially reported for THE ANNALS OF HYGIENE.

such a curvature be avoided or cured. This duty should not be left to shoulder braces alone, as is often erroneously done. The principal muscles, which are in this case of special use by their action and the consequent development and strengthening thereof, are especially the trapezii. The result of contraction of the trapezii causes the backward movement of the head (stretching of the cervical vertebræ) and the backward movement of the shoulders approaching the shoulder-blades (Fig. 2). Besides these muscles the splenius and the complexus are used to cause the backward movement of the head (Fig. 3, etc.). The general sacrospinalis, the spinalus and the longissimus dorsi are required also for the straightening of the spine (Fig. 2, etc.). The contraction of the separate muscles, either singly or in groups, causes an expansion of the muscles of the chest and the elevators of the ribs, thereby lifting the whole chest and causing, while breathing, the action of the lungs to their full capacity (Fig. 5). This is an absolute necessity against a most fatal enemy of health, viz., consumption.

How are these habitually acquired curvatures of the spine caused?

Dr. Billroth best answers this question in his lecture on "General Curvatures of the Spine," and I take the liberty to quote some extracts therefrom, which are especially appropriate to my discussion.

The erect carriage of the spinal column is the result of a constant tension of the muscles. We notice this little while walking or standing, as then all the muscles of the body are in a state of tension. But when, while sitting, we relax the muscles of the lower part of the body, the tendency of relaxation is involuntarily imparted to all the muscles.

Our ordinary comfortable seated position is really a lying one. The erect and proper sitting position can only be accomplished by a vigorous training. It requires a strong, willful, although perhaps (when once acquired) unconscious tension of the muscles of the back.

If the attention of the children while sitting is concentrated on other things, the tension of the muscles of the back and neck is relaxed; the spinal column will be bent by the weight of the forward drooping head, and will, during tuition, be kept in the same curved position for hours.

The curvatures, caused in this way, occur just at the period when the physiological growth of the whole skeleton takes place.

The more quickly the bone grows, the more plastic it is. It therefore easily suffers a change of form from the constant influence of an uneven burden. This explains why the deviations of the spinal column occur chiefly between the ages of 7 and 14.

Overburdening one side causes detention of growth on that side and acceleration of growth on the other side. This uneven growth promotes and produces, in the end, the rigid curvature of the spine. It is safe to say that the most of these deformities are caused by the sitting posture. After once a slight deviation becomes a habit, it will soon be increased if a remedy is not used.

Another cause is inheritance. A certain lassitude and a lack of strength of the fixed parts of the spinal column are considered an inheritable evil, on the foundation of which the deviations are extended if occasion is given.

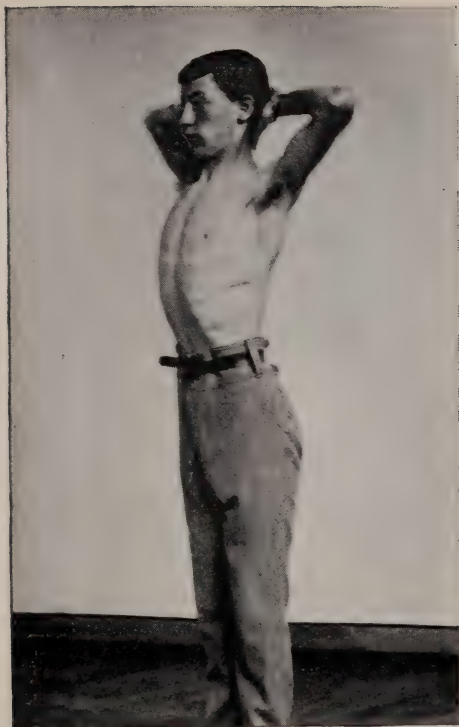


FIG. 5.



FIG. 4.



FIG. 1.

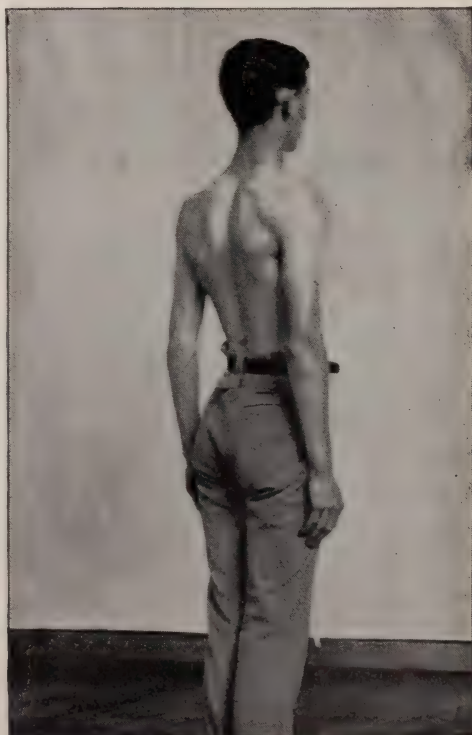


FIG. 2.

The rapid growth of some children should excite the special attention of their parents and guardians, as, for the reasons already given, this is a time when particular attention must be given to the prevention of deformity.

To answer the question, "Why do not all children, who go to school or sit and write at home many hours of the day, suffer from curvatures of the spine?" we may say that the injurious influences already referred to act mostly upon those children who are, from very rapid growth, lax and weak, especially upon phlegmatic children.

The lively, vivacious, although, in general, delicate child often changes its position, both while sitting and standing. Such a child is constantly in a state of nervous agitation, which is imparted, more or less, to all the muscles. The sluggish child remains, whether attentive or thoughtless, mostly in the same position, and allows the upper portion of the body to droop always in the same direction. With strong ligaments and strong bones, the deviations of the day will be neutralized during the night, and the spinal column will again be straight the next morning. But with weaker and softer bones a slight curvature will remain; the next day this will influence the shape of the spine a little more, and in this way the deviation grows day by day more marked. The older the child grows—that is, the nearer it comes to the period when the rapid growth of the bone ceases—the smaller are the chances for a cure.

With such slight prospects for a cure of an already decidedly-developed curvature, all care and attention should be directed to the prevention of the development of such deformity. We should, at least, take notice of the first slight symptoms, in order to avoid further development with all possible means at our command.

The fact that curvatures of the spine occur almost only in civilized nations suggests the cause of the deformities to be the sitting still for hours at a time, and especially the stooping position of the body while writing, which are connected with tuition both at home and in school.

Children must be compelled to cultivate an erect carriage, for in this way only will they unconsciously become accustomed to an even, constant tension of all the sets of muscles of the body.

All the muscles of the body should be developed and strengthened by the most varied physical exercises. The turning in our gymnasiums and private and public schools is the best way to prevent the curvatures of the spine or to remedy them in their first stages.

Such systematic exercises of the body, which strengthen the whole muscular system, thus giving a good support to the skeleton, should belong to the daily exercises of our school children; their proof of their utility would soon be ascertained, and a strong and healthy nation result from such training.

I have taken a few special movements, for the purpose of conquering the early stages of curvatures of the spine, from our daily gymnastic exercises, and have, for better explanation, illustrated them.

These exercises are especially adapted to the age in which the curvatures of the spine begin. I use them altogether successfully in my gymnasium.

Fig. 1 shows the natural, unconstrained position of the pupil; and the deformity, as explained in the beginning of my lecture, is here plainly visible.

Fig. 2 is the fundamental position ; the curvature, in spite of the most serious efforts of the scholar, has not been entirely overcome.

Fig. 3—Exercise 1. (1) Raise arms before you ; (2) move arms sidewise, bending head backward ; (3) straighten head, moving arms forward ; (4) lower arms.

Fig. 4—Exercise 2. (1) Raise arms on each side to the horizontal ; (2) raise arms upward, crossing forearms, and bending head backward ; (3) straighten head and drop arms sideward to shoulder level ; (4) lower arms.

Fig. 5—Exercise 3. (1) Hands on back of head. Elbows sidewise, holding shoulders and head back, and in this position breathe deeply.

Fig. 6—Exercise 4. Bend body forward, holding arms in the position described in Exercise 3, keeping the cervical vertebrae and the sternum straight.

Fig. 7—Exercise 5. Exercises with the wand backward down with bending of head backward.

Fig. 8—Exercise 6. Position, stretched lying backward. Points of support, heels and back of head.

Fig. 9—Exercise 7. On a breast-high horizontal bar. Hang stand backward with hands far apart.

Fig. 10—Exercise 8. On shoulder-high horizontal bar. Bending of arms to backward hanging posture.

Fig. 11—Exercise 9. Backward hang stand on the rings with stirrups.

Fig. 12—Exercise 10. Leaning stay backward on the parallel bars.

With all these exercises the erect carriage of the head must be especially observed and practiced.

In conclusion, let me state that these exercises serve only to give an idea of a larger and more varied collection of movements for this purpose, and that this discussion has had a wholesome and stimulating effect upon my audience.

The Difficulties Encountered by a State Officer in Enforcing Quarantine in Rural Districts.*

BY SPENCER M. FREE, M.D.,

Medical Inspector of the Pennsylvania State Board of Health for the Western Slope District.

THE subject of my paper should properly be "Some of the Difficulties Encountered by a State Officer in Enforcing Quarantine in Rural Districts," inasmuch as the time at my disposal is not sufficient to allow of an examination of *all* of the difficulties encountered. I shall, therefore, name some which I have found to be of especial importance, as I have endeavored to do the work of a sanitary officer of the State Board of Health.

I name, as one of the chiefest difficulties, *ignorance*—ignorance on the part of the physician, of the people, and of the authorities. Ignorance on the part

* Read before the State Sanitary Convention at Altoona.

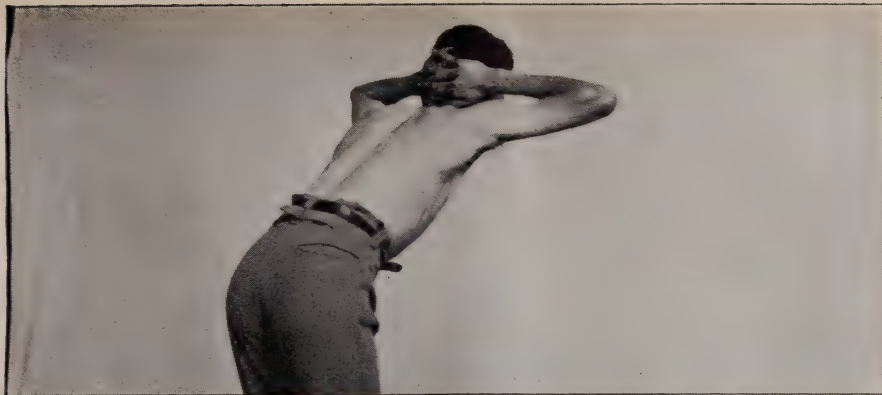


FIG. 6.

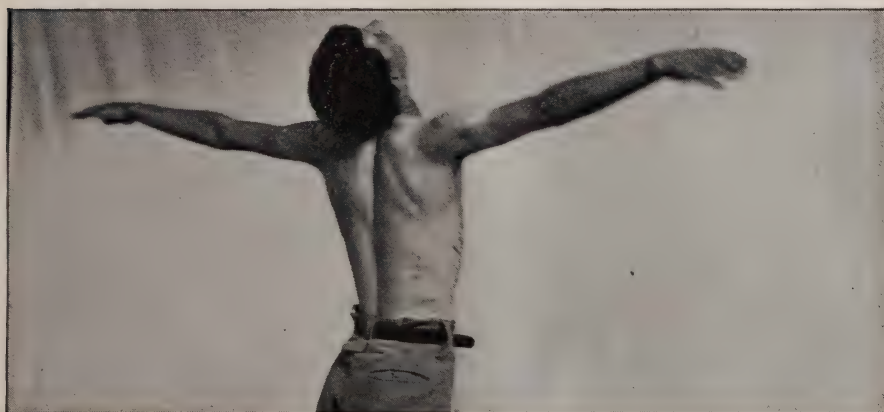


FIG. 3.



FIG. 11.



FIG. 10.



FIG. 12.



FIG. 8.



FIG. 7.



FIG. 9.

of the physician embraces, so far as my present subject is concerned, in the first place, inability to diagnose the disease correctly; in the second place, failure to recognize the disease as a dangerous one to the community, though correctly diagnosed; and in the third place, ignorance of the proper sanitary measures to be used to stamp out the disease, or a culpable carelessness in not instituting such measures, which supposes an amount of depravity in the physician which one cannot believe possible in this age of advanced civilization.

My subject being limited to rural districts, my remarks will, of course, be understood as referring to physicians practicing medicine in the country; but lest they should be thought to mean that country doctors are the only ignorant ones, I wish to say that I have seen and heard as great ignorance among city doctors, and it is the more humiliating inasmuch as the opportunities for information are so much greater and so much more convenient in the city than in the country.

The ignorance of the physician is manifested, as before stated, in his inability to correctly diagnose the disease. This is pardonable when it is an obscure malady, which, as a rule, is not contagious or infectious and does not require quarantine regulations, or when it is one of those few epidemic diseases which are so seldom met with as to be difficult of diagnosis. But when physicians mistake typhoid fever for intermittent, and treat it for several weeks as such, which I have known to be done in two large inland towns of this Commonwealth the past year, by men of excellent standing who should know better, it is unpardonable ignorance, or gross carelessness, which is worse still.

In the cases above referred to, the errors were fraught with very unfortunate results, which would have been prevented had the disease been recognized and properly managed from a sanitary standpoint. It is no uncommon thing for sanitary officers—and they are not, as a rule, men who lay claim to any special superiority in the matter of medical knowledge and skill—it is no uncommon thing, I say, for them to find mistakes in diagnosis in such diseases as scarlet fever, typhoid fever, diphtheria and measles.

This ignorance is also manifested in the failure to use the proper sanitary precautions when recognizing the true nature of the disease.

Some few physicians refuse to believe certain diseases to be contagious or infectious, notwithstanding the great amount of proof open to their inspection, and therefore employ no means to prevent the extension of these diseases, and oppose all such means if employed by a sanitary officer. Many physicians, recognizing the diseases correctly, fail to use sanitary precautions purely through ignorance of the wonderful powers within their reach. Though it may be true, as sometimes charged, that some members of this most noble profession are so base and mercenary as to encourage and rejoice in the sickness of their fellow-men that they may profit thereby, I will not, I cannot believe it true of many. For in this beautiful and busy world of ours, where work is so abundant and callings are so numerous, there is no calling so pure in its intentions, so deep and entwining in its hold on the heart of humanity, so noble in its achievements, so far-reaching in its possibilities, as that of the Christian physician. For my profession I yield the palm to no philanthropist, lawyer or

doctor of divinity ; hence, I do not believe that such ignoble wretches as those referred to can often enter or long remain within our fold.

To illustrate how a good physician was indirectly the cause of an epidemic, let me say that to a small town in the central part of this State there came a man ill with typhoid fever. The attending physicians gave no directions of a sanitary nature, except that the discharges of the patient should be buried. Nothing was said about disinfecting them beforehand, and no germicide was provided for the purpose. The season being wet, the typhoid bacilli, or germs, or whatever you please to call them, were carried through the soil until they reached the vein of water supplying a spring which furnished water for a portion of the inhabitants. The result was, that from this one case, by way of the spring, came twenty-five cases, of which three died, one of them being a prominent and valuable citizen of the town, and another being an equally valuable citizen of an adjoining town. Nothing is a more certain fact in sanitary science than this, that had the discharges of the first case been thoroughly disinfected before being buried, the spring would not have been infected, and no other case would have resulted. The memorable Plymouth epidemic of over eleven hundred cases, with its one hundred and four deaths from this same disease, occurred because the discharges of one case were not disinfected before being thrown on the ground, whence they were washed into the stream supplying a reservoir which furnished water to a portion of the town. Let me repeat that nothing is more certain than that epidemic diseases can be confined within certain small limits, and in many instances can be entirely prevented by the institution and maintenance of proper sanitary measures.

The ignorance of the people forms no small part of this first-named difficulty. There is not much time devoted to the study of sanitary science by country people. Very few of them take a journal on the subject. The daily and weekly papers contain but little information on this topic. It is sparingly and badly taught in the schools, and very rarely by lecture. The epidemic diseases are recognized as such, and also as being dangerous, but the people do not seem to know that they can control and prevent them. Very few persons in an ordinary country community know what are the best disinfectants and how to use them. I was once called to a town of 2,000 inhabitants to explain how to use some disinfectants which had been sent there by the State Board of Health after an inspection by two of the members of the Board. The town is an average town in intelligence, in business and in every way, and is the place of publication of three weekly papers.

Then, too, the interest in the subject of sanitation is not great. When the learned law-making body of this great Commonwealth of Pennsylvania, the intelligent legislature, is *so much* interested in sanitation that it appropriates the appalling sum of \$5,000 annually to the State Board of Health, while at the same time it gives \$15,000 for the propagation of fish, which cannot live in its filthy waters, and \$500,000 for the maintenance of the State militia, it is not surprising that people in the rural districts have wakes over diphtheritic corpses, and church funerals after scarlet fever deaths; that they hold railroad companies responsible for killing drunken men, and regard an extensive epidemic as a dispensation of Divine Providence.

The township and borough officers are elected from among the people, but not on account of their special knowledge of hygiene. They, therefore, generally know no more of the matter than do other people, and do not try to find out, not recognizing this as one of the responsibilities of their official relation. Judging from all circumstances, and from their readiness to call upon the State Board of Health in every emergency, I should say that they are ignorant of the rights and privileges that they have under the present State laws. One seldom finds a borough with a well-organized Board of Health, not often one that has even good sanitary regulations, and there is not a single township in the State that has a health organization. These officers concern themselves about roads, fences, sidewalks, schools, violations of civil law, etc., but do not consider the more important matters of public health. They build school-houses that are not properly heated, ventilated, lighted or furnished, which produce physical deformity instead of proper development. Injury to body and to bodily health is positively assured whether any intellectual development accompanies it or not. They enact and maintain laws and have officers to protect property, to preserve peace, to hang murderers, but they do not provide against adulterated foods and drinks, and the entrance of epidemic diseases which kill their victims as effectually and in greater numbers than do assassins. When, therefore, the sanitary officer comes along with his quarantine station, his quarantine regulations, his disinfectants, his stopping of public funerals, his closing of public schools, his prevention of public assemblages, his rules concerning foods and drinks, personal cleanliness, visiting from house to house, nursing, etc., the people look upon him as a despot. They think that the Board of Health is there to afflict and not to help. It develops much opposition, sometimes even resistance, which requires time, talk and no little force to overcome.

When the people have called on the State Board for help, and the sanitary officer arrives, though they may be willing to do anything asked—and I am glad to say that in the great majority of cases this is true—all the methods, ways of doing things, etc., must be explained, and quite a little time is spent before the regulations can be properly established and carried out.

The next important difficulty is the want of money. As before mentioned, very few boroughs and townships have any sanitary regulations, and hence have no money for such purposes. When an epidemic breaks out and State aid is called for, the question of money for sanitary purposes at once presents itself. A quarantine station may be needed, a building must be erected or bought, or tents must be procured. Provisions must be furnished the inmates. Physicians and nurses must be supplied. Guards must be paid. There may be funeral expenses of no small amount. It may be that free vaccination must be ordered. Where are we to obtain the money? Owing to the *liberality* of our legislature, but \$5,000 a year are allowed the State Board of Health for all purposes. Hence, no money can be furnished to the afflicted community by this body. A fund must, therefore, be obtained from the citizens and corporations of the place and of the surrounding towns. This puts the matter on an insecure foundation, and the superstructure is in constant danger of collapse.

A meeting of citizens must be called, committees appointed to wait upon the people and the corporations. This consumes valuable time, during which only a voluntary quarantine, or none at all, can be maintained. The amount collected is always insufficient for the demands upon it, and a second or a third collection is necessary. The officers are constantly hampered because of this, and are unable to do such prompt and effective work as they desire and ought to do. If the difficulty of money supply were removed, the sanitary officer could make a much better showing in his management of epidemic diseases.

I have occupied so much time in the discussion of these major difficulties that but little is left for an examination of minor ones, nor would most of these latter be hard to surmount were the former ones not present. These embrace such things as the *location* of the quarantine station, which is not always an easy matter to decide upon, and sometimes presents itself as an important difficulty.

The *buildings* for the quarantine station, the kind, style, size, number, material, must all be considered, as well as the time and the money to be consumed in their construction. This makes a difficulty at times of no small moment.

The question of *disinfectants* must be noted as among the difficulties. None are on hand, as a rule, and they must be obtained from a distance. The best ones to use, and the best ways to use them, are not always easy questions to decide.

The *obtaining* of doctors, nurses, cooks, servants, etc., while not a serious matter in some cases, proves to be a very great difficulty when the disease to be quarantined is diphtheria, smallpox, or other of the more dangerous epidemic diseases. I have known it to be impossible to obtain, in cities of large size, physicians and nurses for a smallpox quarantine station in the country.

It is no easy matter to obtain perfectly reliable *guardsmen*, and as so very much depends on the faithfulness of these officers they must be persons of unflinching integrity. Failure at this point means failure complete. On one occasion I had a very important quarantine to maintain, and selected the guardsmen with great care. Men of supposed perfect reliability were obtained, and, after a month of faithful duty, one of them was discovered in collusion with an inmate in a plan to effect the latter's escape.

There should be mentioned, before ending this list of difficulties to be encountered, *opposition* on the part of the patient and his friends to his removal to the quarantine station. This can generally be overcome by a thorough explanation of the subject of quarantine; but at times the opposition is obstinate, and open resistance is met with, making the difficulty a very unpleasant and disagreeable one to surmount.

I have mentioned only some of the difficulties which seem to me to be the more important ones.

We are told that it is easier to point out difficulties than to offer plans for overcoming them, but this latter is not included in my subject.



RUINS OF ONE OF THE FOURTEEN AQUEDUCTS OF ANCIENT ROME.



INTERIOR OF THE STABIANI BATHS AT POMPEII.

Hygeia.*

A CITY OF HEALTH.

BY DR. BENJAMIN WARD RICHARDSON,

Of London, Eng.

WE meet in this assembly, a voluntary parliament of men and women, to study together and to exchange knowledge and thought on works of everyday life and usefulness. Our object is to make the present existence better and happier; to inquire, in this particular section of our congress, what are the conditions which lead to the pain and penalty of disease; what the means for the removal of those conditions when they are discovered? What are the most ready and convincing methods of making known to the uninformed the facts, that many of the conditions are under our control; that neither mental serenity nor mental development can exist with an unhealthy animal organization; that poverty is the shadow of disease, and wealth the shadow of health?

These objects relate to ourselves, to our own reliefs from suffering, to our own happiness, to our own riches. We have, I trust and believe, yet another object, one that relates not to ourselves, but to those who have yet to be; those to whom we may become known, but whom we can never know, who are the ourselves, unseen to ourselves, continuing our mission.

We are privileged, more than any who have as yet lived on this planet, in being able to foresee, and in some measure estimate, the results of our wealth of labor as it may be possibly extended over and through the unborn. A few scholars of the past, like him who, writing to the close of his mortal day, sang himself to his immortal rest with the "*Gloria in excelsis*"—a few scholars might foresee, even as that Bæda did, that their living actual work was but the beginning of their triumphant course through the ages—the momentum. But the masses of the nations, crude and selfish, have had no such prescience, no such intent. "Let us eat and drink, for to-morrow we die!" That has been the pass, if not the password, with them and theirs.

We, scholars of modern thought, have the broader and therefore more solemn and obligatory knowledge that, however many to-morrows may come, and whatever fate they may bring, we never die; that, strictly speaking, no one yet who has lived has ever died; that, for good or for evil, our every change from potentiality into motion is carried on beyond our own apparent transitoriness; that we are the waves of the ocean of life, communicating motion to the expanse before us, and leaving the history we have made on the shore behind.

Thus we are led to feel this greater object: that to whatever extent we, by our exertions, confer benefits on those who live, we extend the advantage to those who have to live; that one good thought leading to practical, useful action from one man or woman may go to the virtue of thousands of generations; that one breath of health wafted by our breath may, in the aggregate of

* This admirable address, delivered before the Social Science Association at Brighton, Eng., is so beautifully expressive of the possibilities of hygiene as to fully warrant its re-publication.

life saved by it, represent in its ultimate effect all the life that now is or has been.

At the close of a Parliamentary session an uneventful leader of a section of Parliament banters his more eventful rival, and, enlivening his criticism by a sneer at our Congress, challenges the contempt of his rival, as if to draw it forth in the same critical direction. Alas! it is too true that great congresses, like great men, and even like parliaments, do live sometimes for many years and talk much, and seem to miss much and advance little; so that, in what relates to the mere present, it were wrong, possibly, to challenge the sally of the statesman who, from his own helpless height, looked down on our weakness. But, inasmuch as no man knoweth the end of the spoken word, as that which is spoken to-day, earnestly and simply, may not re-appear for years, and may then appear with force and quality of hidden virtue, there is reason for our uniting together beyond the proof of necessity which is given in the fact of our existence. Perchance some day our natural learning, gathered in our varied walks of life, and submitted in open council, may survive even Parliamentary strife; perchance our resolutions, though no sign-manual immediately grace them, are the informal bills which ministers and oppositions shall one day discuss, Parliaments pass, royal hands sign, and the fixed administrators of the will of the nation duly administer.

These thoughts on the future, rather than on the passing influence of our congressional work, have led me to the simple design of the address which, as president of this section, I venture to submit to you to-day. It is my object to put forward a theoretical outline of a community so circumstanced and so maintained by the exercise of its own free will, guided by scientific knowledge, that in it the perfection of sanitary results will be approached, if not actually realized, in the co-existence of the lowest possible general mortality with the highest possible individual longevity. I shall try to show a working community in which death, if I may apply so common and expressive a phrase on so solemn a subject, is kept as nearly as possible in its proper or natural place in the scheme of life.

HEALTH AND CIVILIZATION.

Before I proceed to this task, it is right I should ask of the past what hope there is of any such advancement of human progress. For, as my Lord of Verulam quaintly teaches, "the past ever deserves that men should stand upon it for a while to see which way they should go; but when they have made up their minds, they should hesitate no longer, but proceed with cheerfulness." For a moment, then, we will stand on the past.

From this vantage-ground we gather the fact that onward with the simple progress of true civilization the value of life has increased. Ere yet the words "Sanitary Science" had been written; ere yet the heralds of that science summoned the world to answer for its profligacy of life, the health and strength of mankind were undergoing improvement. One or two striking facts must be sufficient in the brief space at my disposal to demonstrate this truth. In England, from 1790 to 1810, Heberden calculated that the general mortality dimin-

ished one-fourth. In France, during the same period, the same favorable returns were made. The deaths in France, Berard calculated, were 1 in 30 in the year 1780, and during the eight years, from 1817 to 1828, 1 in 40, or a fourth less. In 1780, out of 100 newborn infants, in France, 50 died in the two first years; in the later period, extending from the time of the census that was taken in 1817 to 1827, only 38 of the same age died, an augmentation of infant life equal to 25 per cent. In 1780 as many as 55 per cent. died before reaching the age of 10 years; in the later period, 43, or about a fifth less. In 1780 only 21 persons per cent. attained the age of 50 years; in the later period 32, or 11 more, reached that term. In 1780 but 15 persons per cent. arrived at 60 years; in the later period 24 arrived at that age.

Side by side with these facts of the statist we detect other facts which show that in the progress of civilization the actual organic strength and build of the man and woman increase. As in the highest developments of the fine arts the sculptor and painter place before us the finest imaginative types of strength, grace and beauty, so the silent artist, civilization, approaches nearer and nearer to perfection, and by evolution of form and mind develops what is practically a new order of physical and mental build. Penn—who first used, if he did not invent, the little instrument, the dynamometer, or muscular-strength measurer—subjected persons of different stages of civilization to the test of his gauge, and discovered that the strength of the limbs of the natives of Van Diemen's Land and New Holland was as fifty degrees of power, while that of the Frenchmen was sixty-nine and of the Englishmen seventy-one. The same order of facts is maintained in respect to the size of body. The stalwart Englishman of to-day can neither get into the armor nor be placed in the sarcophagus of those sons of men who were accounted the heroes of the infantile life of the human world.

We discover, moreover, from our view of the past, that the developments of tenacity of life and of vital power have been comparatively rapid in their course when they have once commenced. There is nothing discoverable to us that would lead to the conception of a human civilization extending back over two hundred generations; and when in these generations we survey the actual effect of civilization, so fragmentary and overshadowed by persistent barbarism, in influencing disease and mortality, we are reduced to the observation of at most twelve generations, including our own, engaged, indirectly or directly, in the work of sanitary progress. During this comparatively brief period, the labor of which, until within a century, has had no systematic direction, the changes for good that have been effected are amongst the most startling of historical facts. Pestilences which decimated populations, and which, like the great plague of London, destroyed 7,165 people in a single week, have lost their virulence; jail fever has disappeared; and our jails, once each a plague-spot, have become, by a strange perversion of civilization, the health-spots of, at least, one kingdom. The term "Black Death" is heard no more; and ague, from which the London physician once made a fortune, is now a rare tax even on the skill of the hard-worked union medical officer.

From the study of the past we are warranted, then, in assuming that civil-

ization, unaided by special scientific knowledge, reduces disease and lessens mortality, and that the hope of doing still more by systematic scientific art is fully justified.

I might hereupon proceed to my project straightway. I perceive, however, that it may be urged that, as mere civilizing influences can of themselves effect so much, they might safely be left to themselves to complete, through the necessity of their demands, the whole sanitary code. If this were so, a formula for a city of health were practically useless. The city would come without the special call for it.

I think it probable the city would come in the manner described, but how long it would be coming is hard to say, for whatever great results have followed civilization, the most that has occurred has been an unexpected, unexplained and therefore uncertain arrest of the spread of the grand physical scourges of mankind. The phenomena have been suppressed, but the root of not one of them has been touched. Still in our midst are thousands of enfeebled human organisms which only are comparable with the savage. Still are left amongst us the bases of all the diseases that, up to the present hour, have afflicted humanity.

The existing calendar of diseases, studied in connection with the classical history of the diseases written for us by the longest unbroken line of authorities in the world of letters, shows, in unmistakable language, that the imposition of every known malady of man is coeval with every phase of his recorded life on the planet. No malady, once originated, has ever actually died out; many remain as potent as ever. That wasting, fatal scourge, pulmonary consumption, is the same in character as when Cœlius Aurelianus gave it description. The cancer of to-day is the cancer known to Paulus Eginæta. The Black Death, though its name is gone, lingers in malignant typhus. The great plague of Athens is the modern great plague of England, scarlet fever. The dancing mania of the Middle Ages and the convulsionary epidemic of Montmartre, subdued in their violence, are still to be seen in some American communities, and even at this hour in the New Forest of England. Smallpox, when the blessed protection of vaccination is withdrawn, is the same virulent destroyer as it was when the Arabian Rhazes defined it. Ague lurks yet in our own island, and, albeit the physician is not enriched by it, is in no symptom changed from the ague that Celsus knew so well. Cholera, in its modern representation, is more terrible a malady than its ancient type, in so far as we have knowledge of it from ancient learning. And that fearful scourge, the great plague of Constantinople, the plague of hallucination and convulsion which raged in the fifth century of our era, has in our time, under the new names of tetanoid fever and cerebro-spinal meningitis, been met with here and in France, and in Massachusetts has, in the year 1873, laid 747 victims in the dust.

I must cease these illustrations, though I could extend them fairly over the whole chapter of disease, past and present. Suffice it if I have proved the general propositions, that disease is now as it was in the beginning, except that in some examples of it it is less virulent; that the science for extinguishing any one disease has yet to be learned; that, as the bases of disease exist,



MOSAIC ON THE WALL OF THE BATHS OF DIOCLETIAN AT ROME.

untouched by civilization, so the danger of disease is ever imminent, unless we specially provide against it; that the development of disease may occur with original virulence and fatality, and may at any moment be made active under accidental or systematic ignorance.

[TO BE CONTINUED.]

The Beginnings of Disease.

BY JOSEPH F. EDWARDS, M.D.

[Continued from page 536.]

SUCH being the case, is it not clearly evident that the routine practice of medicine is very apt to frequently overlook the cause of symptoms, that is to say, the disease that is causing them, and by so doing to allow many persons to suffer and to die who ought not, in the course of nature, to do either? By routine practice, I mean the treating of symptoms. If a patient comes into my office and complains of inability to sleep at nights, and if I prescribe for him bromide of potash or chloral or opium, I am practicing by routine; if the next patient complains of a pain in the back, and I direct him to apply a porous plaster; if patient No. 3 is pale and weak and complains of fatigue on exertion, and I order him to take iron, I am practicing medicine by routine. In each of these cases I will, undoubtedly, relieve my patient. No. 1 will sleep; No. 2 will lose his pain in the back; No. 3 will put some color into his cheeks and will feel stronger and more equal to exertion. But I am not really doing my patient any lasting good. If, for example, the symptoms of patient No. 3 are due to Bright's disease, the administration of iron may so tone up his system that he will not so plainly show the evidences of the disease, but the changes in his kidneys are going on all the same. I am masking the symptoms, but I am not curing the diseased condition because I have not looked for the cause. If, on the other hand, I make a careful, individual study of each patient; if I ascertain the exact condition of each organ and every part of the body; if I know just what organ is faulty in its action and the nature of the departure from its normal state, as well as the cause thereof, then am I in a position to intelligently direct the vessel of life into the proper channel leading toward the harbor of health and longevity.

Again, it is, I think, a mistake to regard chronic organic disease as an entity, so to speak. I think we fall into error when we consider that a patient has, let us say, chronic organic disease of the heart, and that the departure from health begins and ends here. With acute disease, of course, the affection can be, and generally is, strictly localized; but I do not think that the same can be said of chronic disease.

We must never forget, that we may rightly understand ourselves, that the integrity of the whole organism depends upon the integrity of each individual

part, the aggregation of which constitutes the organism. I can readily understand how one part may be deranged for a short period (as in acute disease) without reacting unfavorably upon another; but I cannot understand how any organ can be the seat of a long-continued derangement without, in turn, interfering with the proper action of a second organ that has been dependent for its integrity upon the normal action of the first. Of course, as in every change of matter, there must be a point of original departure; some organ must take the initiative in the departure from a healthy standard. If we stand 100 men in a group and tie each one to the other; then if we knock one man down the whole 100 must fall; first one falls, but as he is fastened closely to the second, he also must go, and with him pull down a third, and so on, until the 100 are prostrate; so is it with the vital organs, I believe; but if, when three or four men have fallen, some thoughtful person comes along with a knife and severs the thongs that bind them, the equilibrium of the remaining ninety-six or ninety-seven may be preserved. But, if fifty have been dragged down by the fall of the first before the bonds have been severed, then will it be possible to save only fifty, and this remnant may be so weakened by the strain that has been put upon them that they may be unable to stand even when the cause which was dragging them down has been removed. So is it with chronic organic disease. If we recognize the seat, nature and cause of the disease before it has progressed far, then may we not only be able to prevent the secondary implication of the other organs, but we may be able to nullify the evil effects of the disorder in the primary seat of the disease. But if the changes that are going on have been neglected until the condition has become general, until all of the vital organs have become implicated, then, indeed, have we good cause to despair of being able to render any efficient service to our patients.

It is a notorious fact that chronic disease is very free from constitutional symptoms; what I mean is that a slow, chronic process will not make its progress evident to the senses. A chronic ulcer on the surface of the body is noted by the absence of constitutional symptoms, while the whole system is affected oftentimes by an acute ulcer, and that which holds good of an external ulcer is equally true of an internal disease. The reason for this fact is not difficult of comprehension; it is to be found in the law of tolerance. Thus, if any one of my readers, who has never taken any opium, will lay down this book and take five grains of the drug, he will never read any more; but if he will commence with a daily dose of one-quarter of a grain and gradually and persistently increase the dose, the time will come when he can take 50 or 100 or even 200 grains at a single dose without any appreciable effects; familiarity with the drug has bred a contempt for its obviously poisonous properties; but, though it has had no *apparently* evil effects, this prolonged use of the poison has been quietly but surely doing its evil work. So, when an acute disease attacks a body that was previously well, the dose of the disease, so to speak, overwhelms it; the symptoms are most urgent; but if the departure from the normal standard be at first extremely slight, the dose of the disease is so small that its effect is scarcely appreciable; familiarity with this slight derangement

breeds a contempt for its effect, and so, day by day, as the chronic derangement grows more and more pronounced, so does the system grow equally more and more tolerant of its evil influence, until the time finally arrives when the derangement of the organ or organs affected is so great that the power of the body to ignore its effects has become exhausted.

It is because of the insidious nature of the approach and progress of chronic organic disease that I have come to feel that every year and every day of every year many valuable lives are unnecessarily sacrificed. I have no doubt that in the office of every practicing physician there would be found, daily, cases of chronic organic disease if every patient that presented himself were thoroughly examined—cases that are not even suspected—for we must not forget that while chronic organic disease will not, as a rule, force its presence upon the patient by symptoms that will attract and rivet his attention, *yet it will present signs that will demonstrate its existence to the physician who will look for them.*

This brings me to the enunciation of, I fear, an Utopian idea, that I have long cherished fondly in my mind—Utopian, I fear, so far as the mass of humanity is concerned, as it would not be possible to have them acquiesce therein. I have never felt satisfied with the practice of medicine as we find it in the office of the average physician. At the bedside, matters are more satisfactory. When a person is sick enough to be confined to his bed and the physician is summoned, the symptoms manifested are usually sufficiently urgent to demand a thorough investigation, and, as a rule, the intelligent physician will acquire as much familiarity with the condition of his patients as is possible with the means and knowledge at his command. I do not know that we can much improve upon the *rationale* of bedside practice; but it is about what we might call office practice that I am so dissatisfied. I have already hinted at what I mean, but let us now go more into detail.

Of course, there are extremes in medicine, as in every other walk of life. We have routine physicians and we have *extreme* routine physicians; that you may the better understand my idea, I will first assume the position of an *extreme* routine physician, a class that may be typified by the story which a Portuguese newspaper tells of the American physician, whose custom is assumed to be so enormous that the following "laconic process" must be employed:

Enter a woman, with finger in bad condition.

"Cut?" asks the doctor.

"Bite," replies the woman.

"Dog?"

"Parrot."

"Baked potato."

On the following day the lady returns.

"Better?"

"Worse."

"Hot poultice of bread-crumbs."

Third visit—

"Better?"

“Well.”

“Three dollars. Good day.”

If this physician ever has a clear understanding of the nature of the disease with which his patients may be afflicted, or if he ever prescribes the proper treatment, it is because he has accidentally stumbled upon the truth. There is certainly no science in such practice.

The ordinary routine physician may be typified by the *contract* physician in Berlin, who follows this schedule in his examinations and consultations :

Minor surgical cases	15 minutes.
Gonorrhoeal affections	10 “
Headache and other pains	5 “
Influenza	6 “
Rheumatism	6 “
Examination of the lungs	5 “ etc.

Fortunately, we do not encounter many physicians of the first class ; but of the second class there are many. Let us enter the office of such a doctor. I am complaining of rheumatism. The doctor talks to me for, maybe, five or six minutes and gives me a prescription containing salicylic acid. I go off and dose myself with this drug. My rheumatism gets a little better, but I am still considerably troubled with it, and now, in addition thereto, I commence to suffer from dyspepsia. After a while, I commence to feel badly all over. Now, what has happened ? The real trouble, in my case, was that my kidneys were deranged, and what I thought was rheumatism were really only muscular pains that were produced and maintained by the faulty action of my kidneys ; the salicylic acid did me some good, for it does have a specific action on such pains ; but, at the same time, this drug has deranged the functions of my stomach, and, as an irritant to my kidneys, it has only made the disordered condition of these organs worse. But the physician is hardly to blame, because I have presented to him all the evidences of rheumatism, and his text-books all tell him that salicylic acid is a good remedy for rheumatism. But he has not penetrated deeply enough into my case ; he has viewed me, not in my entirety, as a piece of mechanism requiring universal integrity, but as a rheumatic, calling for special medication.

Am I understood ? The public recognize dropsy as a disease ; every physician knows that it is only a symptom of disease of some organ ; but the physician does not follow this idea out to its ultimate logical conclusion. Any physician who would treat dropsy as a disease would be considered a very ignorant man ; he would institute measures to relieve this particular symptom, but he would know that it was only one evidence of some organic disease, and he would also know that unless he could find out the nature of this disease and remove it he could not permanently remove the dropsy. Now, it seems to me that, to be rational, he should follow out this same course of reasoning and practice with every case that presents itself to his notice. If I complain of rheumatism, he should not only seek to find the cause of the rheumatism, but, according to my ideal idea, he should even go further.

Knowing what I do about the human body and its derangements, I would like my physician to make a thorough examination of my whole system. I would like him to examine my heart and lungs; my kidneys and liver; my stomach. I would want him to examine my blood, my muscles, my excrement, my secretions and excretions. I know that physiology teaches us what should be the condition and duty of each and every part of my body; I would like my physician to construct, mentally, an ideal man, based upon the teachings of physiology, and I would like him to examine me and to have me under observation until he could tell me just wherein, and to what extent, I departed from this ideal standard; and then I would like him to tell me how I could make myself conform more closely to this standard. I would be ready to believe him if he were to tell me that I did not require any drugs; that I wanted only a modification of my life habits, and I would be equally ready to trust his skill if he ordered me some drugs to supplement or assist his hygienic advice.

We have all heard persons remark on the value of the old family physician, who has attended the members of a certain family from the date of their entrance into this world, and who, because of this extended observation, is naturally credited with a most intimate familiarity with his patient's system and its requirements. Now, I would that every physician should, by cultivation of the practice of such thorough examinations as I have hinted at, obtain an equally intimate familiarity with the condition and needs of each patient that comes before him.

If I have a pain or an ache, or some reason to think that I have a disorder somewhere in my system, and if I consult a physician for relief, I would not be at all satisfied if he were to confine his examination and his opinion and treatment to the organ or part from which the symptom apparently originates; I would want a complete examination of all my parts. Neither would it be satisfactory to me to have even the most careful examination of my internal organs only; I would want to know something about my blood and my various secretions and excretions.

It may be that my kidneys and liver are all right, so far as they have been examined; it may be that no evidence of disease has been discovered, but I am not yet satisfied. I know that it is the duty of my kidneys to remove certain of the elements of tissue change from my body; that they are scavengers; the examination has revealed the fact that they are doing their work, but I want to know whether they are doing it as thoroughly as they should; I want to know whether my blood is being properly purified, and I therefore ask my physician to make an examination of my blood. Physiology tells me what the blood should be, and my common sense tells me that if my blood does not conform closely to this standard it will not be capable of properly nourishing my body. If I am about locating in a country home, one of my first thoughts is to have the water that I am going to use analyzed; if it is faulty, then I must devise some means to remedy the defect. I am fully alive to the fact that, if good water is essential to health, good blood is pre-eminently so, and I want to know whether my blood is good, and if it is not, I want to know how to make

it so. I know that if I am eating too much nitrogenized food, more than my system requires, the excess must be removed by the kidneys, thus imposing unnecessary and undue work upon these organs; I believe that this extra work will exhaust these organs, and that this exhaustion, if prolonged, will degenerate into chronic disease. Therefore, I know that even though my kidneys may not now be diseased, it is perfectly possible that they may be overworked, and I want to know whether this is the case. If I find that my blood is excessively full of the elements indicated, then I know that my kidneys are being overworked in their efforts to eliminate this excess, and if I do not apply a remedy the time will surely come when I will have Bright's disease. I know that this same line of reasoning holds good with all of my organs, and I know that a careful examination of the blood will elucidate my condition most fully.

I have the firm conviction that the condition of my blood will go far toward demonstrating the needs of my system, and will help greatly to indicate a rational and successful line of treatment. If I find that it is deficient in any particular element, then do I see the necessity of taking measures to supply this deficiency. I would never feel satisfied until I had a full and complete analysis of my blood.

Then, again, physiology teaches me that a most important act of digestion is performed by the saliva, and it furnishes me with the composition of normal saliva. Is my saliva normal, and does it properly perform its work? It is very essential that I should know this; because, if it does not, then the very first step in the process of digestion, the very beginning of blood-making, is not properly performed. Therefore am I anxious that my physician should not only make a chemical analysis of my saliva, but I would also like him to artificially digest, in his test tubes, some of the articles that are usually digested by saliva, using my own saliva for this purpose. If these two tests are satisfactory, then do I have both the theoretical and crucial practical test, that (other things being equal), in my case, the first step in digestion is normal. This fact being ascertained will be a source of satisfaction both to the physician and myself; for we will now know that the food intended to nourish my body has been properly started on its journey. Now this food passes on into the stomach, but, unfortunately, we cannot so easily get access to the digestive juices of the stomach; hence we cannot get down so accurately to the processes that are there taking place. We could procure the juices of the stomach for analysis, but the process by which they would be obtained would be so unpleasant that it would be hardly practicable.

However, we will get at the same thing in a different way. We know that of the materials taken into the mouth, as food, only certain parts are capable of furnishing nourishment to the body; we know that the balance will be ultimately removed from the body as waste. The familiar household illustration of brewing tea will make this clear to you. The tea-leaves are subjected to the action of boiling water, and certain ingredients are thereby extracted therefrom; that which remains is thrown out. So the food which enters the body at the mouth passes down the throat into the stomach, and from there

on into the intestines or bowels. If we imagine a rubber hose, some twenty-six or twenty-eight feet in length, with a very decided enlargement or dilatation (the stomach) about two feet from its beginning, we will have a fairly good idea of what anatomy calls the "alimentary tract"—that is to say, the portion of the body concerned in preparing food—the kitchen or laboratory in which the crude food is prepared for reception into and nourishment of the body. From the moment of its entrance into the mouth, chemical changes are taking place in the food. The saliva first; then the juices of the stomach; then of the intestines or bowels; the fluids of the liver, that are conveyed by tubes into the bowels, all play their respective parts in the conversion of the beef, or the potatoes, or the bread, which we have eaten, into nourishment suitable for the body. You will remember that not all that we eat can be converted into nourishment; like the tea-leaves, there will be left, as refuse, certain portions of that which we have ingested. This refuse will traverse the whole length of the bowels, and will be voided in what should be our daily evacuations.

Now, physiology has been able to tell us all about this chemical transformation of crude food into bodily nourishment. We know what portions of certain articles are capable of being taken into the tissues of the body as nourishment, and what portions will be voided as excrement or waste. But we know even more than this—we know in what portions of the kitchen or laboratory the different changes ought to take place. We know what changes are effected by the saliva; what ingredients are converted by the juices of the stomach; what nourishment is prepared in the bowels; and we are fairly familiar with the duties of the liver and accessory organs. Armed with this knowledge, if we know what has been taken into the mouth, we can, by considering the ingredients that have been removed from it by the process of digestion, and adding to it the waste matter from the system at large that has been carried to and deposited in the bowels, as in a sewer—we can, I say, form a fairly correct estimation of the nature of the waste that should be discharged from the lower end of the bowels.

Therefore, I ask my physician to make a careful chemical and microscopical examination of the evacuations from my bowels. If they are found to be normal, and if my blood is also normal, then can I rest assured that my laboratory is perfect in its workings. I can feel confident that, if any organic disease does exist, it is due to some local, and not to any general cause. But if organic disease does exist, it is not likely that my evacuations will be normal. Perhaps we will find in the discharges some elements that should have been digested in the stomach; then will I know that my stomach is at fault, and I will direct my reparative efforts to that organ. So, by this same process, will I be able to ascertain the efficiency or inefficiency of each and every portion of my apparatus for the preparation of nourishment for my body.

I do not believe it would be possible to overestimate the value of the knowledge that would be derived from a thorough examination of the evacuations from the bowels, particularly if with this examination were conjoined a careful analysis of the blood.

Again, all over the body are thousands upon thousands of sweat glands.

They are not there by accident. Nature has done nothing blindly. She has had a wise purpose in view in even the most seemingly insignificant of her actions. She has had a definite idea in giving us sweat glands. She has intended that they shall, by carrying moisture to the surface, from which it is evaporated, maintain the equilibrium of the bodily temperature; but she has also designed that they shall serve as scavengers to remove a goodly portion of the refuse or waste from the system. Are they doing their duty? I ask my physician to examine my sweat. He gives me a drug to increase the flow of sweat, and he places a glass over a number of these glands to catch the sweat, and he analyzes it. If it is normal, so much the better; if it is not, then we know wherein it is deficient, and we look for the cause; and so on, we go through the various organs and functions.

By this time I have a pretty good idea of the working of my various organs, of the condition of my blood and of my various secretions and excretions.

Now I want to know something about my muscles and my nerves. Are they in proper condition? I ask my physician to bring out his galvanic battery and test the condition of my muscles and nerves; my senses of hearing, vision, taste, smell and touch are also looked into.

Well, now, considerable time has been given to this examination; but with what a satisfactory result! My physician has a clear and distinct and intimate understanding of the condition and workings of every part of my body. If they are all normal, then can I be sure that I neither have, nor am I in fear of having, any chronic organic disease, so long as I persist in my present routine. If I am deranged, my physician knows just where the derangement is located, and to what extent it has progressed. There will be no blind, empirical, routine treatment, following such an examination as this. If I require treatment, my physician will not blindly prescribe some drug for one organ, which, because of the derangement thereof, may prove seriously detrimental to some other organ or part. My condition, as a whole, will be prescribed for, because my physician is familiar with my whole condition.

It is, to me, almost incomprehensible how a physician can be satisfied to confine himself to the examination of only one organ or part, when he realizes how extremely intimately associated and interdependent are all the parts. It can only be accounted for on the ground of apathy on the part of some, and inability on the part of other patients to submit to such an elaborate investigation as I have outlined. The time consumed therein would, of course, increase the cost of such an examination over the ordinary consultation as now in vogue, and this fact would prohibit it for many; but, fortunately, it would not preclude the benefits of such an investigation for those who require it most—the wealthy class—for it is among the rich that chronic organic disease is mostly to be feared and found. The very self-denial necessary to the comparatively poor will save them from chronic disease, while the self-indulgence of the rich will afford the conditions most favorable for chronic organic degeneration.

The Pollution of Streams Within the Borders of Pennsylvania.*

BY PETER McTAMANY,
Of Altoona, Pa.

I DESIRE to improve this opportunity of directing the attention of sanitarians to the pollution of streams, which is increasing from year to year in all parts of the State.

In this paper I will consider one or two small streams which are conspicuous examples, as they are in localities with which thousands are familiar. The first is Turtle Creek, with its tributaries, emptying into the Monongahela River about ten miles east of Pittsburg.

It is the general impression that these waters are polluted on account of mine-drainage. The writer has witnessed the gradual deterioration of this stream for the past thirty years. Twenty-five years ago the water of Turtle Creek was good enough for mechanical purposes, making steam, washing and bathing and for live stock on the farms. At the present time it appears to be good for nothing.

Ask people what is the cause of this, and they will invariably answer that it is caused by the drainage of the coal mines in the valleys above, that it is full of sulphur, etc., coming out of the mines.

This I believe to be a mistaken idea. The filth that finds its way into Turtle Creek does not come out of the coal banks, but it is the great bulk of sewage from dwellings which is continually going into this stream. Twenty or twenty-five years ago there were only a few small villages along the streams, and they did not have any of the present systems of drainage to convey the filth of each and every dwelling directly into the creek. The dirty water soaked into the ground and became filtered before reaching the stream, leaving the sludge behind, and often creating a nuisance on the premises where it started.

To cure this home nuisance, drains were put in to carry the filth to the creeks. The creeks were supposed to be able to stand it, but they cannot. If they were flooded regularly once or twice a month, and had a free and uninterrupted flow, they might, in a measure, do so, but this is not the natural condition of the streams. They are helpless; sanitary science must come to their rescue. Whose duty is it to have remedies applied? The streams are, in a great measure, public property; they appear to be free to all; they really belong to the State while they are within the limits of the State; therefore the State, through its sanitary authorities, is bound to preserve and protect them as much as possible. This has not been done, and we see one of the results in the condition of Turtle Creek.

Can Turtle Creek be restored and made a valuable and useful stream?

I believe it can if the State sanitary officers will give it special attention,

* Presented to the Sanitary Convention held at Altoona.

and direct each and every town, from Brinton to Jeannette, to put in a system of drainage to carry the sewage from dwellings and factories and discharge it into settling basins away from the streams, where the sludge can be taken out and worked into the ground or burnt, and also impose severe penalties for throwing any dead animal or other offensive material into or near the stream.

Slaughter houses and soap factories should be prohibited from allowing any of their offal to go in a stream. This offal and all dead animals can be burnt.

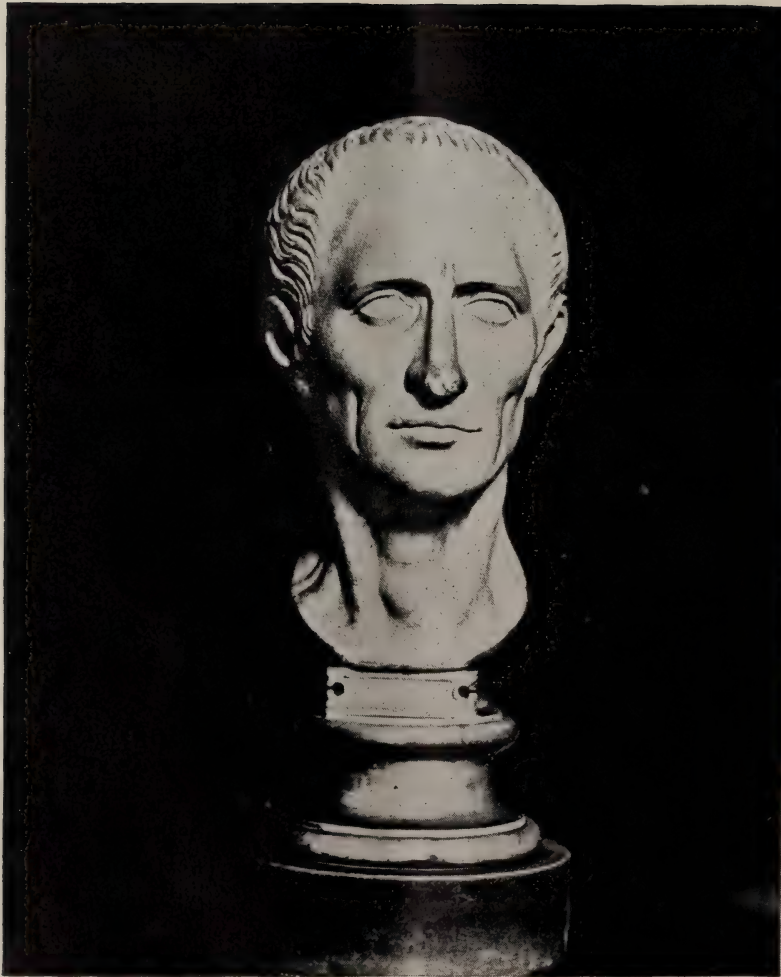
To conclude this reference to Turtle Creek, I will add that this stream is worthy of all the sanitary science that can be devoted to it. It is conspicuously located on the main line of the Pennsylvania Railroad; there are vast industries being established in its valleys, and a large population congregating on its banks, and all appear to think it is the only channel they have to convey their sewage. Sanitary science thinks differently. If scientific measures are vigorously applied as to the disposal of the sewage of the towns, the small quantity of mine-drainage will not be perceptible, and in a few years we may see Turtle Creek flowing to the Monongahela River as clear and as pure as it was twenty-five years ago.

The other stream I intended to allude to in the beginning of this paper is Clearfield Creek, with its head waters commencing at Gallitzin and Cresson, and following the line of the Cresson and Coalport Railroad. It will be subject to the same causes of pollution as Turtle Creek—that is, sewage of towns and villages rapidly springing up all along the line. Some restrictions should be made at once, or this beautiful stream will be destroyed in a very short time; now would be a good time to let these people know their individual privileges and what public policy demands. This paper is offered in the hope that it may be of some service in the noble cause of sanitary reform, and that sanitary science may get the better of the old foggy notion that a stream is just the thing to carry off the filth of the people.

Cremation or decent burial in the earth of all decomposing filth as far from running streams as possible will prevent a great deal of unnecessary pollution.

Diet During Gestation.

To avoid some of the dangers of labor to which many mothers are liable, Dr. Prochownick (*Brit. Med. Jour.*) controls the diet during gestation. Three successful cases are given of pregnancy with contracted pelvis in which the women were carried to labor at full term and the children saved. The principle of the dietary is the diminution of the quantity of fat ingested by the woman and stored away by either mother or fœtus. The diet consists, for example, for breakfast, of a small cup of coffee with about one ounce of bread dried in the oven—for dinner: meat, egg, or fish, with but little sauce, some green vegetable, salad, cheese, etc. The prohibited articles are chiefly water, soup, beer, sugar and potatoes. What a vast amount of trouble to which mankind is subject may be prevented by proper diet!



JULIUS CÆSAR.

THE ANNALS
of HYGIENE. ✻ ✻

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EDITORIAL.

Water and Prowess.

WHO was Julius Cæsar? Is there a school-boy in America who cannot, at once, tell us that he was a very great Roman general who lived and conquered 1900 years ago?

Who is the general-in-chief of the Italian army of to-day? Is there one of our readers who can name him?

We are all familiar with the fact that in the days of Julius Cæsar, Rome was the mistress of the world, and we know equally well that just as her grand aqueducts and sewers have gradually crumbled into ruins, so has her physical prowess forsaken her.

Is there any connection between water and prowess? The physical history of Rome urges us strongly to think that there is.

That a nation may attain such magnificent power as was acquired by ancient Rome, decided unanimity of physical perfection is a necessity; that is to say, the people themselves, the masses, must be physically invincible, so that when led by leaders who are strategically invincible the nation merges into an unconquerable unit, sweeping into subjection every obstacle in its path.

At the time when we find Rome in this practically invincible condition, we also find fourteen mammoth aqueducts carrying into the city an absolutely limitless supply of the purest water from the Sabine Mountains, fifty miles away.

During this glorious period of Roman supremacy we find the *people*, the masses of high and low degree, actually reveling in the purest of water.

To-day, when our political rulers wish to curry favor with the masses, *whisky* is the argument that is used; in ancient Rome it was *water*; for we are told that while the charge for a bath in the magnificent establishments of Rome was only one quarter of one cent, yet whenever an emperor wished to especially ingratiate himself with the populace, he would have the baths thrown open gratuitously, thus evidencing the great popularity of water among these people whose physical prowess has remained unequaled in the history of the world.

We all have a general idea that bathing in ancient Rome was a favorite pastime, we might almost say a necessary duty, so faithfully was it resorted to; but that we may learn more about it, we have requested Prof. Lanciani, of Rome, one of the greatest Roman archæologists, to prepare for us an illustrated article on this subject, which we hope to publish early in the coming year.

To go back, we find Rome at the same time reveling in pure water and

reveling in physical power. Is it unreasonable to claim that there was, most likely, some intimate connection between the two?

Later on we find the Huns, with true barbaric ignorance, destroying the magnificent aqueducts that have furnished this lavish supply of water; and, along in the fifth century, we find the glorious bathing establishments of Rome falling into decay, and, at the same time, we find that Rome is no longer mistress of the world.

Is there not food for reflection in this correlation of facts? Plenty of water, plenty of power—diminished supply of water, decadence of prowess. God-like in their physical perfection were the ancient Romans, and it is but fair to infer that they believed not that "cleanliness was next to godliness," but rather that godliness was dependent upon cleanliness to a great extent, for we verily believe that these wonderful people must have held that it was impossible for an uncleanly person to be possessed of the spirit of godliness.

Of course we do not mean to say that the free use of water was the sole cause of the ancient Roman prowess, nor that its abandonment was the sole cause of the downfall of the Roman Empire (if such were the case Gibbons' bulky volumes would be but useless paper), but we do believe that the practically everywhere presence and universal use of limitless quantities of pure and wholesome water had much to do with the physical prowess of the people. Gradually, as cleanliness became more and more of a "lost art" among the Italians, did the sanitary condition of the country, which is an index of the inclinations of the people, become more and more deplorable; personal uncleanness begot municipal filth until the descendants of the God-like warriors of Julius Cæsar were roused from their sanitary lethargy by the frightful ravages of the cholera a few years ago—a scourge that could never have entered the city of Rome in the days of her "fourteen aqueducts." Thanks to this scourge, this blessing in disguise, Italy is undergoing a sanitary *renaissance*; she is emerging from the oppressive burden of centuries of filth and neglect, and is rapidly taking her place among the most enlightened nations of the world, from a sanitary point of view. But it has cost her many thousands of lives that she might come to realize the necessity for that cleanliness which her ancestry so highly prized, and it is costing her many millions of dollars to bring about that former cleanliness which the preservation of her "fourteen aqueducts" would have forever vouchsafed to her. Truly, Italy has dearly paid for her loss of that appreciation of the wholesomeness of water that was so characteristic of her God-like progenitors; water is one of the few things of which it may be confidently said that "*we cannot have too much.*"

The Human Amœboid.

WE have, on more than one occasion, at the risk of being accused of "old fogyism," asked the question, whether the almost incomprehensibly rapid strides of progress of the nineteenth century were not really rather detrimental than advantageous to the purpose for which humanity exists.

Viewing human life from any and every standpoint, the aim of existence is

to secure happiness. This proposition may be thoughtlessly questioned, but further reflection will demonstrate its universal truth. He who lives that he may secure happiness in the hereafter is, by so living, making himself happy here; he who has no thought for a future state seeks only happiness in the present.

Therefore, from the fanatical materialist, on the one extreme, to the religious fanatic on the other, the universal aim of humanity is the pursuit of happiness. We do not all secure it; far from it; but this failure and the disastrous consequences which ensue serve only to more strongly emphasize the fact that happiness is the beacon toward which we are all trying to steer.

Of course we recognize apparent exceptions to this rule, but we believe such to be only *apparent*, for if we penetrate deeply enough we will always find that every one's acts are tending toward self-gratification, whether it be of a selfish or of a self-denial character, and since self-gratification implies happiness; and since the effort or wish or desire of all is for self-gratification, in one form or another, then it logically follows that the natural impulse of humanity is toward the acquisition of happiness.

Such being the aim of humanity, we would again ask, "Is this aim calculated to be subserved by the unparalleled progress of the nineteenth century?" Is the man who can go to New York from Philadelphia in the morning, transact a day's business and be home again for supper, as happy as he who used to consume four or five days in the journey and have lots of fun en route?

We have discussed this question so often that we would fear to again touch upon it, were it not for the masterly presentation of the subject in a short article in the *North American Review* for November, with the title of this editorial. In this article, Edward P. Jackson (the author), likening the "amœboid cell" (which may be regarded as the ultimate element of the human body) in its relation to the body at large, to the individual man in his relation to the community, argues that specialization, which is the logical result of this era of great progress, while it tends to advance humanity as a whole, reacts to the deterioration of man as a unit. He uses the familiar illustration of watchmaking: while in times gone by, one man could make a watch, now one man can make only one part of a watch, and, as a result of this specialization, while the completed watch is far more perfect than formerly, yet the capacities of the individual workman have been narrowed.

In this age, instead of each one being able to do all things fairly well, each man can do some particular thing extra well. We are losing the "Jacks-of-all-trades" and cultivating "the masters of one."

The inevitable consequence of this tendency is, as we have said, to advance humanity as a whole, but to deteriorate the individual as a whole; his capacity for *variety*, which "is the spice of life," and, therefore, an element of happiness, is narrowed; as he becomes more and more specialized, so does he become more and more of a machine, and less and less of a thinking, reflecting human being.

Specialization is the order of the day, and we would not be so foolhardy as to advise against it, but we would urge the fact that concentration of energy

is inimical to health and happiness, and that, because of this fact, it is vitally important that recreation should be studiously provided for and that this recreation should be diametrically different in character from the nature of one's life-work.

We must have variety for the body and the brain, else health will surely suffer; specialization of work denies to us this variety in our work, hence has it become doubly necessary that we should supply it to ourselves in our recreation.

Seaside Visitors and Damp Beds.

The mischief wrought by damp beds unfortunately does not usually react upon its heedless originators. The sole sufferer is the luckless occupant who buries himself within the chill of the half-dried clothes. An instance in which the injured party appealed successfully to the law for damages is related by the English *Lancet*, which says: "The plaintiff, who had for several days occupied a room at a seaside resort, was told that the apartment was let, and he must accept another.

"Here the trouble began. Illness with its expenses followed, and the final cost to the too unceremonious host was considerable. An action so unusual and a verdict so consonant with sanitary principles deserve to be kept in remembrance; however, the maxim which inculcates prevention is still the best. Not even a money fine will always atone for the injury done for unavoidable illness. Let the traveler, however weary and inclined to sleep, first be careful that his bed is dry. In any case of doubt a change of bedding should be insisted on, and the further precaution of sleeping between blankets rather than sheets is in such cases only rational."

Good and Bad Effects of Cycling.

Cycling as a curative agent (says the *Medical Record*) has a considerable future; it ought not to be taken up at too early an age; the so-called "bicycle back"—round, stooping shoulders—is particularly liable to be produced in a growing lad who uses the bicycle too much; a convenient rule is to avoid recommending it till a lad has passed the age when the chief growth in height takes place. Dr. Jennings' book confirms the impression formed from observation and the perusal of scattered notices in fugitive literature, that cycling is a form of exercise specially useful to men who are growing to be a little more than middle-age. A man who has followed a sedentary occupation begins to experience increasing disinclination to exertion, chronic constipation with some stiffness and, it may be, flying pains in the joints; for such a man a tricycle is capable of accomplishing a great deal; exercise ceases to be a trouble, the bowels become more regular, and the joint troubles which may be at first a little aggravated disappear. Dr. Jennings believes that chronic gout and rheumatic gout may thus be cured, or at least kept at bay, even when the patient has been seriously crippled by several attacks; he also speaks very confidently as to the cure of obesity if the patient will refrain from gratifying the thirst, which is at first very trying.



A NEAPOLITAN MACCARONI MANUFACTORY.
Some of the Descendants of the Warriors of Julius Cæsar making Maccaroni.



Representatives of the Italian Populace in the Days when
Her Baths are in Ruins.

NOTES AND COMMENTS.

Dangerous Pets.

A French scientist declares that the domestic pets of the world carry at least thirty per cent. of the common contagious diseases from house to house.

India-rubber Heels.

India-rubber heels are recommended by a French military surgeon in order to prevent repeated slight shocks to the nerve-centres, to which he believes the sensation of fatigue is largely due.

Disinfecting Cakes.

O. J. Bierbach reports to the Oregon State Pharmaceutical Association that he has examined the so-called "urinal cakes" and found them to be a mixture of resin with sulphates of copper, iron, zinc and soda, and some alum.

The Source of False Hair.

The English consul at Canton says that eighty thousand pounds of human hair have been exported from that city during the past year, and that it comes mainly from those who have died of contagious diseases, mendicants and criminals.

Two Aged Physicians.

Dr. Hiram Corson, of Norristown, aged 87, recently attended the funeral of Dr. Isaac Zook Coffman, aged 86, at Phoenixville. Dr. Coffman practiced medicine for sixty-four years. Dr. Corson has been engaged in active practice sixty-three years.

Multum in Parvo.

The *Utica Herald* prints the following comprehensive and exhaustive treatise on the evil effects of tobacco: "Thomas Delany, of Albany, aged 19, thought nothing of smoking five or six packages of cigarettes a day. His funeral took place Saturday."—*Pharmaceutical Era*.

The Lecture Course of the Franklin Institute.

In the lecture course of the Franklin Institute, for the season 1891-92, Dr. J. Madison Taylor will speak on December 7 of "Physical Exercise: its Relation to Health and Medicine;" and Dr. L. Webster Fox on January 29, on "Eyesight: its Care During Adult and Old Age."

The Comparison of Sick.

The following incident occurred in a Medford school: A class in grammar was reciting, and one of the younger boys was asked to compare "sick." He began thoughtfully, "Sick," paused, while his brain struggled with the problem, then finished, triumphantly, "Sick, worse, dead."—*Harper's Bazar*.

A Sanitary Complication.

A perplexing suit has been commenced in Paris. A suburban practitioner, called to attend a patient suffering from scarlet fever, advised the landlord to disinfect the house. This was done, and the landlord sued the patient to recover the cost. The latter thereupon sued the doctor for breach of professional secrecy, and it is thought he will win his case.

A Useful Plaster.

A plaster composed of one part of carbonate of lead in two parts of olive oil is considered in Holland to be an efficacious remedy for sprained joints. Dr. Duhamel has been trying its effect in Paris on a number of cases, most of which were sprains of the ankle, and it is said the patients were made to walk as soon as the plaster and retaining dressings had been applied.

Humor, not Wit, in the Sick-Room.

Humor, says Dr. Holmes, is a very good thing in a sick-room. It is much better to carry a cheerful air and excite a mild spasm of the diaphragm in the patient than to appear like an undertaker. But while humor is a good thing, and, as has been aptly said, "laughs with you," wit is an edged instrument, not to be used in the sick-room; for wit, unlike humor, "laughs at you."

The New Secretary of the Illinois State Board of Health.

Dr. Frank W. Reilly has been appointed Secretary of the Illinois State Board of Health, to succeed Dr. Rauch. Dr. Reilly has had some experience in the work, and has been for four years the managing editor of the *Chicago Daily News*. It is not likely that the good work inaugurated by Dr. Rauch will in any way suffer in the hands of his successor.—*Times and Register*.

Denver Looking after its Undertakers.

At Denver, Col., a very loose system of burying people without permits appears to have been in vogue for some time, and the Board of Health has issued very stringent instructions to funeral directors and superintendents of cemeteries in regard thereto. Hereafter the funeral director in charge will be required to present the burial permit to the cemetery officials before any interment will be allowed.

Living for Three Months on Milk.

One day, while dining at the house of a friend, the Rev. C. H. Spurgeon was heard to say that he had lived for three months on nothing but milk. This gave rise among the company to several questions as to what prevented him from eating solid food, from what complaint he was suffering, how his strength was maintained, what sort of milk was it, and in what quantity did he take it. After everyone's curiosity was fully aroused, Mr. Spurgeon, with a twinkle of fun in his dark eyes, said, "Ask my mother."

Thought Transference.

Professor Lodge, president of the section of Mathematics and Physics at the late meeting of the British Association, used the following language: "May there not also be an immaterial (perhaps an ethereal) medium of communication? Is it possible that an idea can be transferred from one person to another by a process such as we have not yet grown accustomed to, and know practically nothing about? In this case I have evidence. I assert that I have seen it done and am perfectly convinced of the fact."

Disinfection of Scarlatina Patients.

Jamieson recommends the daily washing of scarlatina patients with Eichoff's three per cent. resorcin-salicylic superfatted soap. After the washing they are anointed with olive or almond oil. The nurse who uses the soap should protect her hands with rubber gloves, or by using a large sponge. In this way desquamation is hastened. The patient is able to associate with the public at least a fortnight sooner than under the old plan of inunctions of carbolized oil during the period of desquamation alone.—*Canadian Practitioner*.

How to Drink Milk.

Why milk is "distressing" to so many people, as they commonly complain, lies in the method of drinking it. Milk should never be taken too quickly, or too much at one swallow. If a glass of it is swallowed hastily it enters into the stomach and then forms one solid, curdled mass, difficult of digestion. If, on the other hand, the same quantity is sipped, and three minutes at least are occupied in drinking it, then on reaching the stomach it is divided, and proper digestion is obtained, as well as a most nutritious effect.—*Health Journal*.

Beer-drinking and Heart Disease.

It is said (*Blätter f. klin. Hydrotherapie*, 1891, No. 4) that disease of the heart is very prevalent in Munich, where the consumption of beer amounts, on the average, to 565 liters per head annually; and in the same place the duration of life among the brewing trade is shorter than that of the general population. Whereas the average attained among the latter is 53.5 years, that of ale-house keepers is 51.35 years, and of brewers 43.33 years. The same note adds that for the whole of Germany the annual consumption of beer per head amounts to 88 liters, but for Bavaria it is 209 liters.—*Medical Age*.

Preserving Cut Flowers.

National Druggist says that a lady in St. Louis has had great success in following this method: The flowers are cut early in the morning before the dew is off, and are thoroughly wet by dipping into a solution of sodium bicarbonate of a strength of about one part of the salt to sixteen of water. After letting stand for a little time, they are then dipped in a saturated aqueous solution of salicylic acid, removed at once and placed under a bell glass for a short time to dry. We should think, however, that placing the flowers in a strong solution of sodium salicylate would better answer the same purpose.

An Instance of the Faith Cure.

A noted English bishop had for years nursed the fear that he would some day become paralyzed. On one occasion, at a dinner, he suddenly interrupted the guests at table by exclaiming that his worst fears had been realized at last; that he was paralyzed in his right lower limb; that he had been pinching his thighs for some moments, and was unable to detect the slightest feeling. A lady sitting next to him assured him that he was mistaken, for it was *her* limb he had been pinching instead of his, the silk of the lady's dress being difficult to detect from the silk of the bishop's robe. He was cured.—*Harper's Monthly*.

The Vehicle Cure.

A Philadelphia physician was called by a foreign family, and prescribed one pill to be taken three times a day in any convenient vehicle. The family looked into the dictionary to get the meaning of the prescription. They got on well as far as the word "vehicle." To this they found "cart, wagon, carriage, wheelbarrow." After a grave consideration they came to the conclusion that the doctor meant that the patient should ride out, and while in the vehicle he should take the pill. The supposed advice was followed to the very letter, and in the course of a few weeks the fresh air taken so regularly completely cured the patient.

Cover Up Little Cuts.

An abrasion on the skin of the finger, caused by scratching a little pimple, has been causing us some little annoyance, while writing, because of the flies which would persistently seek this exuding surface; and the reflection came to our mind that a fly, fresh from some contagious sore or disease on, or in, someone else, might readily poison the whole editorial system of THE ANNALS OF HYGIENE, by depositing on this raw surface the germs of a contagious malady. A piece of plaster immediately adorned the editorial finger, and the advice is given that it would be well to always so protect any abraded surface whenever there are flies about.

The Gastric Juice.

A physician is authority for the following statements in regard to the action of the gastric juice on microbes: "The empty stomach of a healthy man contains innumerable organisms. The gastric juice, and principally the hydrochloric acid, possesses microbicide properties. The microbes take no active part in digestion. Persons who, on account of some affections, secrete little hydrochloric acid, are easily intoxicated by means of the micro-organisms in the stomach. Therefore, the stomach should not remain in an empty condition for any length of time, and during an epidemic food should be taken at frequent intervals, and, if possible, sterilized."

A Regulation by the Board of Health of Syracuse.

The Board of Health of Syracuse, N. Y., has amended the Code so that hereafter no undertaker or other person shall exhibit the remains of anyone,

whether dead from accident or otherwise, in any public place, except a church or chapel wherein funeral services are being held at the time, unless such remains should have been duly appareled, coffined and otherwise prepared for burial, without first having obtained an official permit. The fine is \$25. All undertakers must also notify the Registrar of any change in the burial place of bodies. A permit for interment will also be required for the burial of all bodies brought from other towns.—*Progression.*

Practical Philanthropy.

The 1,500 children sent by the city of Paris on thirty-day trips—the scrofulous to the seaside, the anæmic to the mountains—were all weighed at the mayoralties, their chests measured, and their muscular strength tested before starting and on their return. It was found that weight, height, general strength and muscular power had increased in striking degrees and in most cases. Those who in the first week were hardly able to walk two miles a day were able, without fatigue, to do seven or eight miles before the end of the trip. The cost of the outing, including traveling expenses and a month's board and lodging, came to twenty dollars a head.—*Providence Medical Journal.*

A Cheap Disinfectant.

The nitrate of lead is the cheapest disinfectant known that fulfills its intent. It does not, however, prevent putrefaction. The chloride of lead is much more effective in all directions. It is made by dissolving a small teaspoonful of nitrate of lead in a pint of boiling water; then dissolve two full teaspoonfuls of common salt in eight quarts of water. When both are thoroughly dissolved, pour the two mixtures together, and when the sediment has settled you have two gallons of clear fluid, which is the saturated solution of the chloride of lead. A pound of nitrate will make several barrels of the liquid. The nitrate of lead costs from eighteen to twenty-five cents a pound at retail.—*Medical Bulletin.*

Indian Ideas of Marriage.

Cornelia Sorabji gives us "The Stray Thoughts of an Indian Girl," in the course of which she states the Indian conception of marriage. Curiously enough, Mrs. Lynn Linton seems to have fallen very much in love with the Indian woman's view of marriage, which is as follows:

"From the woman's side (1) that she may have some male in whose rear she may walk into heaven, for her own good deeds gain her no entrance there; or (2) if she has no brothers, that the said male may lead the family procession within the gates. Viewed from the father's side it is that he may leave behind him some one to pray his soul out of hell (*pat*), and offer sacrifices to the supernal and infernal deities."—*The Review of Reviews.*

Sanitation in Typhoid Fever.

Measures instituted in the French army and the military government of Paris have resulted in diminishing the mortality from typhoid fever one-third,

and the frequency of the outbreak one-half. These results are due to two measures: the suppression of fixed wells, and the bringing of pure water from sources in the country, whenever possible, or by the use of filters in the barracks where there is danger of contamination.

In villages these measures cannot be enforced, because we cannot compel a proprietor to close his well, nor prevent his use of the water. For this there must be a change in the laws, as at present we can only rely on the good-will and intelligence of the inhabitants, which is very little in this order of things.
—*Le Progrès Médicale*.

Japanese Embalming.

Colonel Ballingall, a prominent citizen of Ottumwa, Ia., died recently while traveling in Japan, and the remains were "embalmed" at a cost of \$1,000, and shipped home. The Ottumwa funeral director, while satisfied that the right corpse was sent, reports that the remains were in a terrible condition. They had been buried three days, and were then disinterred and embalmed. In doing this the Japanese undertaker did not move the remains from the coffin, but turned it on its side. The body was then cut open from the collar bone to the lower part of the abdomen, the heart, lungs and other viscera were removed, and the cavity filled with pounded charcoal and arsenic. It was then sewed up and packed solid in excelsior. When received by the Ottumwa undertaker, the body was found to be in a horrible condition.—*The Casket*.

Sanitary Precautions Reduce the Death Rate.

According to *Progression*, a journal devoted to the interests of undertakers, the sanitary authorities of Denver, Col., are ruining undertaking there. Through strict enforcement of the health laws, the deaths for September, 1891, were but 127, against 240 for September, 1890. The deaths from typhoid fever during the month of September last year reached the rather alarming number of 56; this year there were but 15. The rate per 1,000 for the month was only 13.4. In September, 1887, it was 17.4; in 1888, 21.8; in 1889, 22.4; in 1890, 27. The percentage of deaths per 1,000 is based upon the census population of 1890, plus 7,000, the average annual rate of increase. If the deaths from consumption contracted elsewhere are removed, the death rate for the population proper is brought down to 12.8 per 1,000, an unusually low figure.

The Strategic Cure.

A celebrated German physician was once called upon to treat an aristocratic lady, the sole cause of whose complaint was high living and lack of exercise. But it would never do to tell her so; so his medical advice ran thus: "Arise at 5 o'clock, take a walk in the park for one hour, then drink a glass of tea, then walk another hour and take a cup of chocolate. Take breakfast at 8." Her condition improved visibly until one fine morning the carriage of the baroness was seen to approach the physician's residence at lightning speed. The patient dashed up to the doctor's office, and on his appearing on

the scene she blurted out: "O doctor, I took the chocolate first!" "Then drive home as fast as you can," ejaculated the astute disciple of Esculapius, "and inject the tea with a syringe, for the tea must be at the bottom." The spell was not broken.

The Hygiene of Courtship.

It might seem far-fetched to speak of "the hygiene of courtship," were it not that truth, which is, truly, stranger than fiction, warrants us in doing so, for it tells us of the case of an Indiana brunette who, for some days, had suffered from a supposed attack of pleurisy, but when Dr. S. F. Bordman was called in, he found that one of the young lady's ribs was fractured. After much questioning the girl blushing admitted that her best beau had inflicted the injury while giving her his usual tender embrace before parting on his last visit. The occurrence of the accident was marked by a sharp pain in the side, a "catch in her breath," and a sudden relaxation of her hold. Certainly, when such "bruin-like" embraces are possible accompaniments thereof, we are justified in uttering a word of warning against such violently demonstrative and disastrous methods of courtship.

Tommy and Thomas.

An old lady of 82, whose physical condition is so good that she would ask only for a little better eyesight, recently said to us that, in her opinion, so much depended upon the way in which one brought up children. Her four-score years of experience argued against the overly-dressed while pretty to look at, yet is so restrained and his movements by the excess of finery with which



TOMMY.

dened that the freedom necessary development is not possible. Give she said, the rough-and-tumble clean, yet plainly clad; no use-cheap, strong clothes; freedom to knowledge that he can romp and fear of punishment for having soil-a frill. It is the happy, healthy, Tommy who will become the octogenarian, rather than the delicate, precocious, overly-dressed little Thomas.



THOMAS.

Thomas, who, constrained in he is bur-for healthy me, rather, "Tommy;" less finery; move and the play without ed a founce or roughly - clad

The Water Supply of New York.

At a recent meeting of the Board of Health of New York, the report of Drs. Martin and Beebe, who have explored seventy-seven miles of the Croton water shed, was received. The report is serious enough to arouse a strong public movement to reform the abuses complained of. This report consists of sixty specifications, and each specification refers to from six to twenty separate and distinct nuisances. All that was feared of the contamination of the New York water by nuisances

along the Croton River is confirmed. Analyses of water taken from reservoirs and hydrants in different parts of the city show distinct traces of nitrites. If the pollution continues, the drinking of the water, unless it is first boiled, will soon be dangerous. President Wilson, of the Board of Health, says that the Board will continue its investigations and will take vigorous steps to stop the nuisances and prevent the pollution of the water.

Angels Don't Chew Tobacco.

The following is said to be true: A preacher "out West," Mr. H., was a good man, but very rough in his way, and very much given to chewing tobacco. One time he was riding on horseback through the country, when there came up a shower. Riding up to a cabin, he hastily hitched his horse, and knocked at the door. A sharp-looking old lady answered the summons. The preacher asked for shelter.

"I don't take in strangers—I don't know," replied the lady suspiciously.

"But you know what the Bible says," said the preacher—"Be not forgetful to entertain strangers, for thereby some have entertained angels unawares.'"

"You needn't quote Bible," said the old lady quickly; "no angel would come down from heaven with a quid of tobacco in his mouth, as you have!"

The door was shut, and the preacher unhitched his horse and rode away in the rain.

The American Public Health Association.

The American Public Health Association was organized in 1872 for the purpose of inaugurating measures for the restriction and prevention of contagious and infectious diseases, and for the diffusion of sanitary knowledge among the people. The growth of the association and the work it has accomplished more than justify its existence. Its membership has been augmented from year to year, until it now constitutes the largest and strongest sanitary body in the world, and embraces in territorial extent the United States, the Dominion of Canada, and the Republic of Mexico. Under the impetus given by its work, State and local boards of health and sanitary associations have been organized, sanitary publications increased, and hygienic knowledge widely and extensively diffused. The qualifications required for membership are, a good moral character, an interest in hygiene, and the indorsement of two members of the association. Application blanks may be obtained from the Secretary, Dr. Irving A. Watson, Concord, N. H.

Babyhood.

The November number of *Babyhood* closes the seventh volume of that standard nursery guide for parents. It contains an article on "The Family Medicine Chest," by the medical editor, which gives precise instructions as to what ought to be kept on hand in every household for use in an emergency. At the same time the writer points out the dangers of indiscriminate domestic doctoring. Other medical articles of interest to mothers are "The Care of Delicate Infants" and "Bathing for Sick Children." "The Nursery Table"

tells how to prepare palatable nursery dishes, and the "Nursery Helps and Novelties" and "Nursery Problems" furnish useful hints and advice concerning the many perplexing questions which parents of young children have to solve. In the "Parliament" the mothers discuss the habit of eating "between meals," the homesickness of children, the baby's photograph, the influence of Punch and Judy on children, etc., etc. 20 cents a number, \$2.00 per year. Babyhood Publishing Co., 5 Beekman Street, New York.

Innocent Amusement Promotes Health.

Much amusement can be derived from the little idea figured in this drawing. If one places a coin (say a quarter or a dime) in the palm of the hand, as depicted, and allows another to attempt to brush it off with a clothes brush,



using the motion that would be used in brushing clothes, it will be found impossible to do so. Of course, if the brush be depressed into the palm of the hand, the coin will be removed, but if the brushing be done as one would brush a coat it will be found impossible to brush the coin from the hand.

Mind Cure.

Henry Wood writes an interesting and temperate article on the subject of mind cure in *The Arena*. In referring to the popular hostility to the doctrine, he says what must appear reasonable—namely, that failures in treatment are not peculiar to mind treatment, but are likewise the daily results of the practice of surgery and materia medica. "The one great principle which underlies all mind healing is contained in the assumption that all primary causation relating to the human organism is mental or spiritual. The mind, which is the real man, is the cause, and the body the result. . . . The physical man is but the printed page, or external manifestation of the intrinsic man which is higher and back of him." *Materia medica* deals with the body, the effect; mind cure deals with the mind, the cause.

There are two methods of practice: one is by persistent self-discipline, the other by the intervention and efforts of another person called a healer. Sometimes there is a combination of both. Self-healing requires greater abstraction of mind than is possible for some persons, and hence the need of the help of another.

The Food Supply of the Future.

Professor W. O. Atwater, of Wesleyan University, contributed an article to the November *Century* on "The Food Supply of the Future"—the first in a series which will have especial value to farmers. The writer believes that the doctrine of Malthus—that the time will come when there will not be food enough for the human race, owing to the theory that population increases in a geometrical and food supply in an arithmetical ratio—is one which need never give the world any uneasiness owing to the great advances that are being made in chemistry.

Science has shown what are the essential factors in vegetable production, and plants can now be grown in water or in sand by adding the proper chemicals. Professor Atwater gives the result of an interesting experiment recently made in his laboratory. Sea-sand was brought from the shore of Long Island Sound. To divest it of every possible material which the plant might use for food except the sand itself, it was carefully washed with water and then heated. It was put into glass jars, water was added, and minute quantities of chemical salts were dissolved in it. Dwarf peas, planted in this sand, grew to a height of eight feet; while peas of the same kind, planted by a skillful gardener in the rich soil of a garden close by, reached a height of only four feet.—*New York Medical Times*.

The Influence of Diet on the Growth of Hair.

In the *British Medical Journal* for July 25, Dr. E. D. Mapother says: "Several cases of shedding of hair after influenza have confirmed my opinion that diet has much to do with the production and with the cure of baldness. Hair contains five per cent. of sulphur, and its ash twenty per cent. of silicon and ten per cent. of iron and manganese. Solutions of beef, or rather of part of it, starchy mixtures, and even milk, which constitute the diet of patients with influenza and other fevers, cannot supply these elements, and atrophy at the root and falling of hair result. The color and strength of hair in young mammals are not attained so long as milk is their sole food. As to drugs, iron has prompt influence. The foods which most abundantly contain the above-named elements are the various albuminoids and the oat, the ash of that grain yielding twenty-two per cent. of silicon. With care these foods are admissible in the course of febrile diseases, when albumen is the constituent suffering most by the increased metabolism. I have often found a dietary largely composed of oatmeal and brown bread greatly promote the growth of hair, especially when the baldness was preceded by constipation and sluggish capillary circulation. Those races of men who consume most meat are the most hirsute. Again, it is well known in the zoological gardens that carnivorous mammals, birds and serpents keep

their hair, feathers or cuticle in bad condition unless fed with whole animals, and the egesta contain the cuticular appendages of their prey in a digested or partly digested state.”

Microbes and Carpets.

In our endeavor to be comfortable in this vale of tears, there is a tendency to overlook the elementary laws of hygiene, and in no respect, perhaps, more so than in the superabundance of curtains and carpets—those non-patented contrivances for hindering the free circulation of fresh air and stultifying nature's automatic arrangements for the deodorization and disinfection of our homes. Carpets are always objectionable when they are not designed to permit of easy removal for cleansing purposes without the necessity of turning the room topsyturvy. In most houses the carpet only comes up once a year, by which time it is as full of microbes and accumulated filth as its interstices will allow. No wonder, then, if our rooms preserve a musty smell in spite of periodical opening of windows and vigorous sweepings, which only displace a portion of the dust, to settle promptly elsewhere in some less accessible spot. Fixed carpets are even more objectionable and unwholesome in bedrooms, for there they absorb the fetid emanations of the night, and soak up various decomposable materials for future use. The ideal would be a polished wooden floor, garnished with rugs in sufficient number to give an aspect and feeling of comfort, while admitting of easy exposure to the salutary influence of air and light. Rugs, carpets and curtains ought to be frequently shaken and hung up in the fresh air if they are to remain sweet, not once a month or year, but twice or thrice a week, if not oftener. At this price only can we hope to deprive confined spaces of their native unwholesomeness, and the sooner housewives lay this maxim to their hearts and act upon it the better.—*Hospital Gazette*.

The Death Agony.

“Many persons wonder,” said a house doctor of a well-known hospital to a New York *Telegram* reporter, “how physicians can watch unmoved the death of a person whose dissolution is seemingly accompanied by evidence of great suffering, and the remark is a common one that doctors are heartless and unfeeling. This harsh criticism is founded on a wrong idea of things. The fact is, that what is known as the death agony is largely restricted to the imagination of the watcher at the bedside of the dying person. The visible spasms and distortions of the facial muscles which in many cases mark the ending of life are not only painless, but take place unconsciously so far as the dying person is concerned.

“Even in case of death by hanging, where the prolonged agony of the sufferer is feelingly described by witnesses, it is reasonably certain that in a few moments the person becomes unconscious and dies in that condition. Such has been the experience of persons accidentally or purposely hanged, but afterwards resuscitated. It is a fact that people who have been nearly drowned agree in the statement that after a few moments of painful struggle a feeling of tranquillity ensues.

"The suffering is while the resuscitated person is being brought back to consciousness. Then it is that he often suffers physical pain and mental misery. It is a merciful dispensation of God and nature that, when the last moments of the dying man are at hand, vital forces give out, and the long-drawn-out gasps for breath come and go, the apparent sufferer is, happily, in a comatose condition, and so passes painlessly into the other life."

Utilization of Sewage.

The *Contract Journal*, of London, England, states that the Board of Houghton-le-Spring has decided to adopt a system of sewage utilization recommended by Mr. D. Balfour, M. Inst. C. E.

The process consists in first mixing the sewage in large tanks (in du) with alumino-ferric, a cheap chemical which contains 46.7 per cent. of sulphate of alumina, which is suspended in iron baskets or cages immersed in the sewage to admit of the necessary proportions being dissolved to effect precipitation. It does not, like a large number of chemicals, require any machinery, or add any bulk to the sludge, being entirely soluble in water. It exercises a deodorizing effect, and is not liable, being a neutral salt, to re-fermentation. The clarified sewage is then passed into ten acres of loam land laid out for intermittent filtration, which consists in forming the land into half-acre beds, broad-ridged and furrowed, and used in regular rotation, and having special under-drainage, with ventilation shafts, from which, with regular and systematic management, the effluent will pass in a colorless and inodorous state. As sufficient suitable land could not be obtained, this chemical precipitation process was conjoined with the available limited land for the purpose of chemically precipitating and deodorizing the solid matter as much as possible before applying the sewage to the land. Various succulent crops, including vegetables and osiers, are grown on the ridges, the sewage filling the furrows. The scheme was approved by the local government board, and the contract for carrying it out has been let by the local board of health to Mr. John Carrick, contractor, Durham, under the superintendence of the engineer.—*Sanitary Record*.

Disinfection.

According to Behring, lime has about the same germicide value as the other caustic alkalies, and destroys the cholera spirillum and the bacillus of typhoid fever, of diphtheria and of glanders, after several hours' exposure, in the proportion of 50 c.c. *normal-bauge* per liter. Wood ashes of lye of the same alkaline strength may, therefore, be substituted for quicklime.

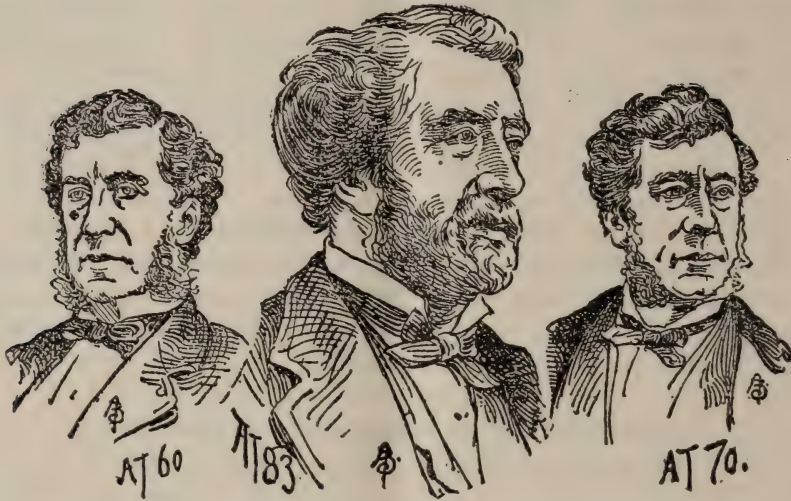
It must not be forgotten that we have a ready means of disinfecting excreta in the sick-room, or its vicinity, by the application of heat. Exact experiments made by the writer and others show that the thermal death-point of the following pathogenic bacteria and of the kinds of virus mentioned is below 60° C. (140° F.): Spirillum of cholera, bacillus of anthrax, bacillus of typhoid fever, bacillus of diphtheria, bacillus of glanders, diplococcus of pneumonia (*M. Pasteur*), streptococcus of erysipelas, staphylococci of pus, micrococcus of gonorr-

rhœa, vaccine virus, sheep-pox virus, hydrophobia virus. Ten minutes' exposure to the temperature mentioned may be relied upon for the disinfection of material containing any of these pathogenic organisms, except the anthrax bacillus when in the stage of spore formation. The use, therefore, of boiling water in the proportion of three or four parts to one part of the material to be disinfected may be safely recommended for such material; or, better still, a ten per cent. solution of sulphate of iron or of chloride of zinc, at the boiling point, may be used in the same way (three parts to one). This will have a higher boiling point than water, and will serve at the same time as a deodorant. During an epidemic of cholera or typhoid fever, such a solution might be kept boiling in a proper receptacle in the vicinity of the hospital wards containing patients, and would serve to conveniently, promptly and cheaply disinfect all excreta.—*Journal American Medical Association.*

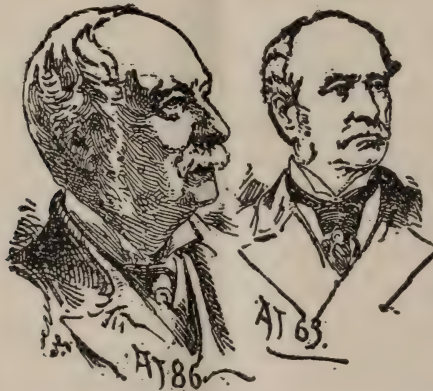
Architecture in Relation to Hygiene.

Dr. B. W. Richardson, who stands in the foremost ranks of sanitary authorities, delivered a lecture upon this subject. He began by showing that much prejudice has been excited against some of the best sanitary inventions and labors, because leading sanitarians have failed to consider artistic construction as part of sanitary construction; their whole minds have been absorbed in the useful, and they have permitted all that is ornamental to pass by, as if good taste were disconnected from sanitation. He argued that this was a grand mistake; that ugliness was an offense to good health, and that beauty was an aid to the best health. He showed that when mind and body are enfeebled by bad health, the introduction of disagreeable objects into the sick-room or ward is painful and injurious to the occupants; while the presence of beautiful flowers, pictures and designs is curative in its effects—a kind of mental tonic, giving tone also to the body. This thought led him to the consideration of the best forms for hospital wards, having regard to the effect on the eye, and, through the eye, on mental and bodily health, and so with all the details of visible construction and of decoration. Speaking of the dwelling-house, he maintained that no part ought to be excluded from the possession of architectural art, because it is the tendency of the human mind to let that which is disagreeable, plain and ugly go without regard, and accumulate dirt and disorder. Hence all the offices of a house should have as much care bestowed on them as the living-rooms, to render them bright and cheerful, and to make cleanliness as obvious a necessity in one as the other. In this lecture, Dr. Richardson made a great point of the treatment of floors, adverting particularly to the ancient Roman mosaic floors, which were not only beautiful works of art, but easily cleaned, and, by the well-known hypocaust system of warming, diffused an equable and agreeable warmth through the room, without draughts. Other points especially dwelt upon were the treatment of roofs and the introduction of artistic water-fountains in different parts of the house. No one could be found better qualified than Dr. Richardson to speak with authority on both the æsthetic and scientific aspects of the question, "What is the relation of architecture to hygiene?" but even when writing in the interests of art, he is naturally, first of all, a man of science.—*Scientific American.*

Growing Old Gracefully.



The HON. HAMILTON FISH at 60, 70 and 83 years of age.



DAVID DUDLEY FIELD at 63 and
86 years of age.

Burial Among Polish Jews.

The statement that these people bury their dead in a sheet, without any coffin, is false, and probably arises from the fact that it is their religious custom for every married man to have a fine silken or woolen "tallis," or scarf, which he carries to the synagogue with him, and uses in his devotional exercise.

When he is dead the body is wrapped in linen instead of clothing, and this tallis is wrapped around him. The body is placed in a coffin, taken to the synagogue, and, after certain ceremonies have been performed, is taken to the cemetery, where the body is taken from the coffin and placed inside of four loosely constructed boards, so made that the earth can have access to the body, all of which is done in strict religious observance.

The Jewish laws say that a body must be kept at least two days, and buried at least four feet deep.

Grown Old Gracefully.



ADMIRAL SIR PROVO WALLIS,
of the British Navy, at the
age of 100.

Effects of Ventilation on Micro-organisms.

Dr. Richard Stern has made experiments on this subject in a room in which he could have quiet air, or a more or less complete ventilation. The openings in the walls of the room were so arranged that he could admit the air from without either at the upper part near the ceiling and convey it off near the floor on the opposite side of the room (winter ventilation), or the air could be admitted near the floor and conducted out on the opposite side of the room near the ceiling (summer ventilation). The rapidity of the ventilation was also under complete control. The air of the room was intentionally loaded with micro-organisms. Pure cultures were mixed with the dust collected from school-rooms and factories. This was then dried and pulverized and blown about the room. The air was then examined for the number of micro-organisms, by Petri's method, at various times. The conclusions arrived at were:

(1) That the micro-organisms rapidly sink to the floor in quiet air. The finer

the dust upon which the micro-organisms rest the slower the gravitation. (2) The usual ventilation, effecting a renewal of air from one to three times an hour, has no effect upon the removal of micro-organisms with summer ventilation, and only to a very limited extent with winter ventilation. (3) Ventilation, effecting a more rapid renewal of air (six or seven times to the hour), effects the removal of micro-organisms, but slightly without a sensible draught. (4) A rapid and complete removal of the micro-organisms from the air is only attainable with a strong draught. (5) Micro-organisms are not blown off from the floor, walls, furniture, clothing, etc., even with the stronger draughts. (6) The evolution of steam in a room is not capable of rapidly and completely precipitating the micro-organisms, although it hastens this process to an appreciable extent.—*Boston Medical and Surgical Journal*.

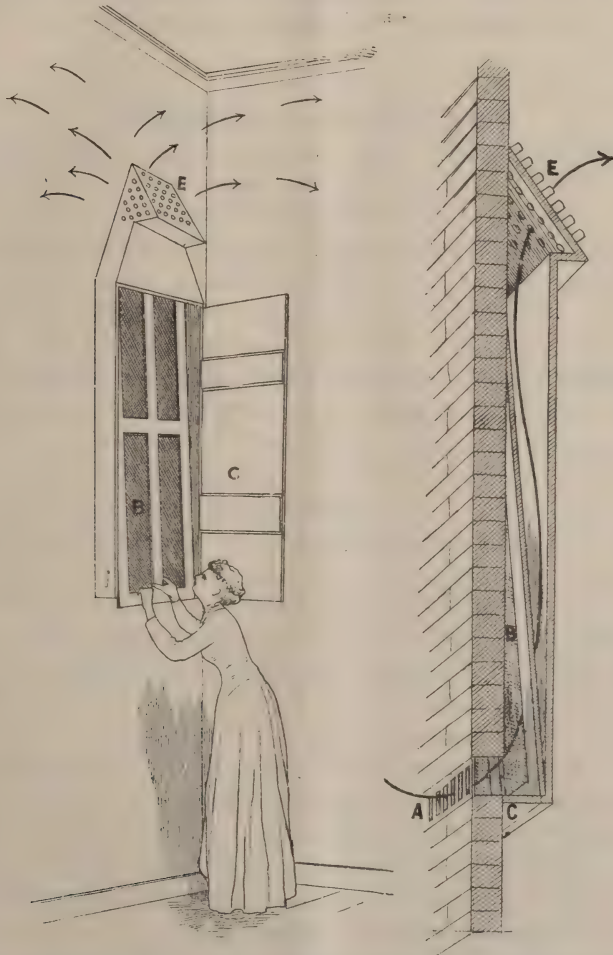
The Antiquity of Rheumatism.

A very valuable find of skeletons has been made in Egypt by Mr. Flinders Petrie, who has recently opened a number of tombs previously intact at Medum, belonging to the beginning of the fourth dynasty. This is the earliest known date of Egyptian remains, and that to which the Egyptians ascribe themselves. The skeletons are well preserved, but tender and friable. Some of them bear unmistakable evidences of rheumatic changes, and consequently indicate that at that very remote period man was subject to and suffered from this, as is now shown from its antiquity, venerable disease. No ornaments or objects of art, except occasionally some rough pottery or a wooden head-rest, were found with these remains. The greater number were interred in a contracted position with the knees drawn up to the breast, even when the tomb was long enough to allow burial in the extended position; the body placed on the left side, wrapped in linen cloth; the head always to the north, and the face to the east. A few, however, apparently the bodies of the highest class or race, were interred in the extended position, along with vases of stone or pottery and head-rests. At this period there is no trace of mummification. The essential difference in the mode of interment seems to point to difference of race, and it is probable that the contracted burials are those of the prehistoric race of Egypt, while the dynastic race were interred with the body extended. It is extremely interesting to find these contracted burials common at so early a date in Egypt, as a similar mode was adopted by the earliest inhabitants of Great Britain. Mr. Petrie has brought the skeletons to England and deposited them at the College of Surgeons, where they are being treated so as to strengthen them and render them available for the anatomical investigation which Mr. Petrie intends to have made in order to determine, if possible, their ethnographical affinities. When this is done we shall doubtless also have a full description of any pathological condition which may be present.—*British Medical Journal*.

Ventilation Without Dust.

Mr. T. Prigdin Teale, from whose admirable work on "Hidden Dangers to Health" we have had occasion so often to quote, furnishes the suggestion by which we may secure *clean* air and exclude dust and dirt from the house. He thus describes the device which our drawing depicts:

"Having secured for each room its own supply of air for the chimney, the next question was, how to *clean the air*, and *exclude the dirt*. I had long seen that if air is to pass through a screen without retardation of the current entering the room through the tube, the area of the screen must be many times (perhaps fifteen or twenty times) the area of the section of the tube. Acting upon a suggestion of Messrs. Bapty, of Leeds and Bombay, I requested Messrs. Harding, of East Parade, Leeds, to place a screen, if possible, in the tube itself, telling them that the screen must be at least ten times the area of the section of



"A is the grate in the outer wall, to keep out birds and mice. This grate must not 'throttle' the air, *i. e.*, must not admit less air than the tube it has to supply can carry.

"B is the screen covered with canvas or bunting. It slides in grooves, and is removed twice a week that it may be brushed, or the meshes would be choked.

"C is a door to allow the screen to be withdrawn from the bottom of the tube, for the purpose of cleansing.

"D is a slit, closed by a valve, through which a slide can be passed to shut off the current of air.

"E is Harding's 'Diffuser.'

"Harding's 'Diffuser' is patented, but the screen is not patented.

the tube, and that the section of the tube must equal the section of the chimney pot. Mr. Joseph Harding very shortly hit upon the happy idea of placing the screen in the tube diagonally from top to bottom, and thus achieved what I was seeking.

"Recently, Messrs. Harding invented a means of admitting air into a room without draught, named a 'Diffuser.' It is a contrivance by which the fresh air is shot into the room through a series of short tubes placed in the front and sides of a box. This box being placed near the ceiling, the cold air mixes with the warm air, and thereby no draught is felt. The form of ventilation, therefore, which I have found to answer best is a combination of Harding's 'Diffuser' with the broad, flat tube containing a screen. As in this arrangement the tube reaches almost to the ceiling, the screen has to be withdrawn downward from the tubes. I am satisfied that by means of this apparatus we can secure in a town *freshness of atmosphere, absence of draught, and exclusion of dirt.*"

The True Way of Resting.

There are various kinds of rest. A person whose occupation is chiefly carried on by the use of his brain, rests that organ when he changes his work to physical labor. Thus, a student who spends eight hours a day in intense mental application derives immense benefit, not only to his brain, but to his whole system, by a brisk walk of two or three hours, or a like period employed in chopping wood. In such a case as this there is no complete rest for the body; it is simply a change of labor from one kind to another kind. It amounts to nothing more than a proper exercise for the mental and physical systems, and if accompanied with seven or eight hours' sleep and five or six hours for eating and amusement, might be carried on indefinitely in any ordinary healthy locality. The body does not require absolute rest, and, as a matter of fact, it never gets it; for even in sleep there is a not inconsiderable functional activity of various organs going on. Such a student as I have referred to would receive great advantage from going to the woods, or to the mountains, or to the seashore, for the summer; not to lie down in a hammock or to loll on the sand, but to take his books with him, preferably devoted to subjects different from those he has studied in the city, and to exercise his muscles by rowing a boat or hunting for natural history specimens on land or sea, instead of working in a gymnasium or walking up and down Broadway or Fifth Avenue. Such a person not only alters the character of his mental and physical labor, but he does it with such advantages as are to be derived from change of air and scene, and they are by no means inconsiderable. Now, this is not rest; on the contrary, it is work, and very hard work, too; but no one can doubt that that student would return to his regular pursuits with a mind and body invigorated and capable of doing better things than when he left the city. . . . In short, a man or woman is to be managed in respect to rest in very much the same way that a farmer manages his field. The latter knows the advantage of a succession of crops. He knows that if he plants cabbages every successive year in the same piece of ground he will, in a short time, have very poor cabbages and very poor ground; whereas, by changing from one to another, the product is better and the earth is not deteriorated. He knows, also, how much his land is improved by allowing it to lie fallow every now and then. Men and women, like the fields of the earth, require change, and, like them, require rest; and these objects can never be attained in the way that the average American sets out to get them.—*Dr. William A. Hammond, in North American Review.*

SPECIAL REPORTS.

State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania.

PRESIDENT,

J. H. McCLELLAND, M.D., of Pittsburg.

SECRETARY,

BENJAMIN LEE, M.D., of Philadelphia.

PEMBERTON DUDLEY, M.D., of Philadelphia.

J. F. EDWARDS, M.D., of Philadelphia.

GEORGE G. GROFF, M.D., of Lewisburg.

J. H. McCLELLAND, M.D., of Pittsburg.

S. T. DAVIS, M.D., of Lancaster.

HOWARD MURPHY, C.E., of Philadelphia.

BENJAMIN LEE, M.D., of Philadelphia.

PLACE OF MEETING,

Supreme Court Room, State Capitol, Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Thursday in May, July and November.

State Board of Health of Pennsylvania.—Seventh Annual Report of the Secretary, Benjamin Lee, M.D.*

DR. J. H. McCLELLAND, *President of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania:*

Sir: In offering this, his Seventh Annual Report, it is your Secretary's pleasing duty to congratulate the Board on the fact that its numbers continue unbroken. The reappointment of Dr. J. F. Edwards and the appointment of the Hon. Samuel T. Davis, M.D., by his Excellency, Governor Beaver, were confirmed by the Senate early in the recent regular session of the Legislature; and Drs. G. G. Groff and Pemberton Dudley, having been reappointed by his Excellency, Governor Pattison, on the expiration of their terms of office, in June of the present year, presented their commissions and took their seats at the July meeting.

CHANGES IN MEDICAL INSPECTORSHIPS.

The Board has not been so fortunate, however, as regards its Medical Inspectors. Dr. James L. Stewart, of Erie, Medical Inspector of the Lake District, embracing the counties of Erie, Crawford, Warren, Mercer, Venango and Forest, closed his long and useful career soon after the beginning of the new year. As the leading practitioner of his section of the State and a former President of the State Medical Society, he commanded the respect of his medical peers, as well as of the public generally, and made the influence of the Board strongly felt in his large and important district. Dr. A. A. Woods, of Erie, the successor of our lamented President, Dr. Germer, in the position of health officer of that city, and the associate of Dr. Stewart in much of his work as an inspector, fills the place left vacant by that officer's death. Dr. C. L. Gummert, of Brownsville, Medical Inspector of the Southern Tier District, including the counties of Fulton, Bedford, Somerset and Fayette, died early in the summer. He was one of the many unfortunates, and probably one of the first, who hastened to Berlin, on the premature announcement of the discovery of Prof. Koch of the cure of tuberculosis by inoculation, in order to make trial of it in his own case. He returned to his home apparently improved and much encouraged, but his hopes proved illusory, and he soon sank under renewed inroads of the disease. He was an intelligent

* Presented to the Board at the meeting held in Harrisburg, November 12 and 13, 1891.

and energetic officer, and had enjoyed the advantages of military service under the United States Government. His place has been filled by the appointment of Dr. J. S. Hackney, of Uniontown, President of the Fayette County Medical Society, who has already given proof of the wisdom of his selection.

MEETINGS.

During the year eight meetings—four times the number required by law—have been held: three regular, including the present, and five special. They were in order as follows: Special meetings, December 22, 1890, and March 5 and May 1, 1891; regular meetings, May 14 and July 9, 1891; special meetings, August 31 and October 24, 1891; and a regular meeting, November 12, 1891.

SANITARY LEGISLATION.

The Committee on Sanitary Legislation looked forward to the session of the State Legislature during the present year with much hopefulness as an opportunity for obtaining statutory enactments which would place the work of the Board on a firmer basis, confirm its powers and extend its usefulness by increasing its pecuniary means. Especially did it feel encouraged by the strong recommendations of his Excellency, Governor Beaver, in his message at the opening of that body, in favor of such legislation, and the still stronger arguments which he used in support of them. The following extracts from that document will indicate the grounds on which they based their expectations:

EXTRACTS FROM GOVERNOR BEAVER'S MESSAGE TO THE LEGISLATURE, JANUARY 5, 1891.

"Soon after the adjournment of the preceding Legislature, to wit, on the 31st of May, 1889, the Commonwealth was visited by a calamity which has no parallel in its history. Throughout the mountain region of the central part of the State a rainstorm of unprecedented duration and severity prevailed, which so increased the volume of water that the ordinary channels of drainage were unable to carry it away. The result was widespread desolation and ruin, extending over some twenty of the sixty-seven counties in the Commonwealth. Thousands of lives were lost, and property, municipal, corporate and individual, aggregating many millions of dollars, was destroyed.

"The people inhabiting the regions drained by the west branch of the Susquehanna, the Juniata and the Conemaugh Rivers were the principal sufferers. Many villages, towns and cities on the eastern slope of the Alleghanies were, for the time being, rendered utterly helpless, and their people prevented from pursuing their usual vocations. In addition to the loss of life and property sustained, the public health was greatly endangered, and municipal officers deprived of the power to exercise their authority, or to furnish the means by which the situation could be relieved.

"On the western slope of the mountains, Johnstown and its neighboring boroughs were almost obliterated. In some cases the officers of municipalities were lost, whole communities were swept away, streets and other boundaries utterly obliterated, and municipal government generally broken up. The people were for a time thoroughly helpless. Food and clothing were furnished by those who were charitably disposed, and a relief committee from the neighboring city of Pittsburg commenced the work of removing the debris which had collected at the confluence of the Conemaugh and Stony Creek, so as to relieve those who remained of the danger of pestilence which seriously threatened them. The State Board of Health was early upon the ground and took immediate and energetic steps toward the preservation of the public health.

"On the 8th of June, after issuing a formal proclamation to the people of the world, appealing for their charitable help for the distressed within our Commonwealth, and arranging for the receipt and careful account of the charity, which was sure to follow the appeal, I made a personal visit to Johnstown and a thorough inspection of all its surroundings. The Pittsburg Relief Committee was practically in charge of the distribution of charitable relief, of the burial of the dead and of the abatement of nuisances which seriously threatened and affected the public health. Although the State Board of Health, under the provisions of the sixth section of the Act of the 3d of June, 1885, had power and authority in

cities, boroughs, districts and places having no local Board of Health, or in case the sanitary laws or regulations of any place where boards of health or health officers existed should be inoperative, to order nuisances, or the cause of any special disease or mortality, to be abated or removed, and to enforce quarantine regulations as said Board of Health shall direct, and the power thus conferred seemed to be absolute and unlimited, yet no appropriation having been made by the Legislature in view of such an overwhelming calamity, and no sufficient funds being available for enforcing the authority conferred by the said Act, it was practically helpless. The authorities of the Pittsburg Relief Committee, however, recognizing the fact that the State was bound to abate these nuisances, which not only threatened the health of the entire community, but absolutely blotted out municipal authority, and in some cases municipal existence, demanded that work should be undertaken at once by the State Board of Health.

"It was urged that it would require at least three millions of dollars to clear the valley of these threatening nuisances, and that in order to provide the funds for this purpose the Legislature should be immediately assembled in special session. A careful examination of the district convinced me that the amount required to discharge the duty which the State owed to the community was greatly exaggerated, and that the work could be done for about what it would cost to assemble the Legislature in special session and secure the necessary legislation therefor. The work was of immediate and pressing importance. The flood had so interfered with telegraphic and railway communication that it was not then possible to reach some parts of Pennsylvania, and the Legislature could not have been assembled in time to afford the needed relief, even if it had been deemed desirable to provide for it in this manner.

"Upon the representation of the State Board of Health that nuisances prejudicial to the health and safety of the people existed in various parts of the State, proclamations were issued requiring them to be abated at the expense of the Commonwealth. In a personal consultation with members of the Pittsburg Relief Committee and of citizens of Johnstown, I agreed that the State would take charge of the strictly sanitary work at Johnstown, on Wednesday, the twelfth day of June, 1889, and in order to carry out this agreement authorized the State Board of Health to take charge of the work and to employ such means as were necessary to carry it into effect. The Adjutant-General of the State, who was upon the ground, was authorized to co-operate with the State Board of Health as my immediate representative.

"The necessity for and the work done by the State Board of Health throughout a large portion of the Commonwealth for many months succeeding the floods of 1889 demonstrate the necessity for the existence of the Board and the wisdom of enlarging its power. The waterways of the Commonwealth are becoming more and more the source of water-supply to all our cities and larger towns. The purity of the water therein becomes, therefore, a question of vital importance. The investigations of the Board of Health prove conclusively that in many cases of epidemic diseases prevention is easy if the water-supply can be controlled and purified. The time has come when the Legislature should take decided grounds and prompt action upon this subject.

"It may become necessary to revolutionize our entire system of sewerage for cities, towns, and public institutions. Instead of emptying this mass of corruption into our streams, carrying disease and death to those who depend upon them for their water-supply, it will be necessary to devise and carry into execution some efficient system of disposing of the sewage of dense communities. I recommend that the authority of the State Board of Health over such subjects be increased, with such safeguards as may be necessary, and that the appropriation for their general expenses be so increased as to enable them to make careful and thorough investigation and experiment as to the best means of avoiding the dangers herein recited, and at the same time affording an efficient and healthful system of sewerage."

The American Public Health Association.*

THE nineteenth annual meeting of the American Public Health Association was held at Kansas City, Mo., October 20-23, 1891. The association convened in the auditorium of the Warden Grand Opera House, and was called to order at 10 A.M., October 20, by the President, Dr. Frederick Montizambert, of Quebec, Canada. Prayer was offered by the Rev. Samuel N. Noel. After considerable preliminary work, the reading of papers was proceeded with.

Dr. C. D. McDonald, of Kansas City, read a paper on "The Cause and Prevention of Infant Mortality." He gave statistics showing that the infant mortality soon after birth was twenty per cent. One of the principal causes was exposure to a low temperature—a chilly room—soon after birth.

"Glanders in Man" was the subject of a paper by Dr. Jos. Sharp, of Kansas City. The doctor classed glanders with acute infectious diseases, such as tuberculosis. The especial feature of the paper was a report of a case which occurred in the author's practice. Dr. Paul Paquin, of Battle Creek, Mich., told of a collection of seventeen cases of glanders in a man which he had collected in Missouri when living there.

Chief Justice Albert Horton, of Kansas, read an interesting paper on "The Necessity for More Stringent Legislation to Repress Empiricism."

The next paper read was on "Water Supply and Public Health," by Mr. Allen Hazen, of Lawrence, Mass. This paper dwelt principally upon the typhoid fever and cholera germs which infect impure water.

At the evening session appropriate addresses were delivered by Governor D. R. Francis, of Missouri; Governor L. U. Humphrey, of Kansas, and the Hon. John T. Peak, of Kansas City, Mo. Following these came the President's Address, by Dr. Montizambert. He said that disregard of the laws of health arises not so much from antagonistic views in relation to proper sanitation as from our tendency to undervalue the homely little facts and little opportunities of everyday life. As it has been well said, if every individual in a city appreciated the fact that he is, to some extent, responsible for the condition of the public health, and in order to keep his conscience clear, kept his back yard and alley clean, the reports of the commissioner of public health would show the result of the multiplied effort.

October 21, morning session, Dr. Paul Paquin read a paper on "Vaccine and Vaccination," in which he touched first upon the necessity for pure vaccine, and told of some of the diseases that come from impure vaccine. The doctor had made experiments on 100 rabbits, guinea-pigs, fowls, etc., and found several forms of bacteria in the vaccine.

Dr. Delos Fall, of Albion, Mich., followed with a paper on the "Disposal of Garbage." He spoke of the intimate relation between typhoid fever and the accumulation of waste organic matter. The method used in New York is taking the waste out to sea and dumping it. Philadelphia recommended cremation. San Francisco favors cremation. Chicago objects to the use of waste in filling holes and vacant lots, and then building houses on them. Dr. Charles N. Hewitt, of Red Wing, Minnesota, spoke of unfavorable results from using bad vaccine in his State, and of the difficulty in obtaining good vaccine, giving his personal experience. Dr. Yesi, of the City of Mexico, spoke of compulsory vaccination in Mexico. In his country human vaccine alone was used. Dr. L. F. Soloman, of New Orleans, replied that in Louisiana each child must show a vaccination certificate before being allowed to attend school.

Dr. Edward Clark, of Buffalo, made a report on the "Collection and Transportation of Garbage and Refuse in Cities." He advised full police power for the sanitary service of large cities.

At the evening session Dr. J. J. Kinyon, of the U. S. Marine Hospital Service, read a paper on "Rabies," in which he opposed the idea that the disease is confined to warm weather. Statistics showed that the greater number of cases occurred in December and May.

Dr. P. C. Remondino, of San Diego, Cal., read a paper on "American Climates and

* Specially reported for THE ANNALS OF HYGIENE.

Their Physical Effects." He said that the American people live in happy disregard, in a large measure, of all hygiene or science. In changing climate they follow no rational rule whatever for the really necessary change of diet.

A paper on the subject of "Animal Diseases" was read by Mr. Ernest L. Dundas, U. S. Veterinary Inspector at Kansas City packing houses. He spoke strongly against the evil of diseased cattle being shipped to market.

"New Organization of the Supreme Board of Health of Mexico," formed the theme of a paper submitted by Dr. Domingo Orvananos, of the City of Mexico. In this paper the outline of work covered by the Mexican Supreme Board of Health was given, showing a most complete system of supervision, a system which would tend to make it one of the most thorough in operation in any country. One exceedingly good feature of the code is the sending of a surgeon-physician with every ship leaving Mexican ports who shall be held responsible for the sanitary condition of the vessel, and who shall be obliged to report to the Mexican consul at every port where the vessel may touch, and obtain from him a clean bill of health.

October 22, morning session, Dr. Peter H. Bryce, of Toronto, read a paper on "The Present Position of the Milk Supply Problem from the Public Health Standpoint, and Some Practical Methods for Securing Safe Public Supplies." The author said that it is especially desirable that a system of periodic veterinary inspection be exercised in addition to the dairyman's inspection. Strong views should be held and exercised regarding the nature and quality of food for cows. All decomposed foods, as those which are liable to undergo fermentation, should be wholly avoided. The best foods are well-ripened grains and grasses. The care of the milk at the time of taking, and subsequently, is of all points the most difficult and the most essential to supplying a wholesome milk. The delivery of milk is of prime importance. When milk has reached the consumer it must be placed in a refrigerator or promptly consumed.

Dr. J. Ramon Ycaza, of Mexico, read a paper entitled "A Few Considerations upon the Progress of Public Hygiene in the Republic of Mexico." Dr. Nazario Lomas, Cuernavaca (Moreles, Mexico), member of the Board of Health of the State of Moreles, and Director of the General Hospital, read a paper on "Notes on the Hygiene of Rice Culture." Moreles is the great rice-producing State of Mexico, and Dr. Lomas' paper touched upon the sanitary effects of this culture. The vast rice swamps were declared to be most unwholesome.

Report of the committee on "Car Sanitation" was read by Prof. W. W. Daniells, Chairman, Madison, Wis. He said the great difficulty in the heating arrangement of cars was that all systems thus far devised are for heating alone, and that ventilation is not sought. Dr. R. Harvey Reed, of Mansfield, Ohio, said that if the public asked for these things, as it demanded fast trains and elegant car upholstery, it would get them. Prof. Daniells thought that cars should be made differently. Instead of covering Pullman car with expensive tapestry, they should be furnished with rattan or leather, as the cars on some of the suburban trains. Dr. Joseph Sharp recommended comfortable air cushions that could be taken out and cleaned.

October 23, morning session, Dr. Charles N. Hewitt, of Minnesota, read a paper entitled, "The Existing Methods of Dealing with Emigrants as Respects Infectious Diseases in England and on English Ships, and the Notification of Infectious Diseases among Immigrants to the United States the Duty of the National Sanitary Authorities to the Sanitary Service of the States; an Example of such an Arrangement between the United States Authorities and the State Board of Health of Minnesota."

Dr. A. N. Bell, of Brooklyn, read a paper on "The Bath and its Adoption."

The Executive Committee reported to the association two important resolutions. One was by Dr. Holman, declaring it the sense of the association that State and provincial inspection of the production of vaccine virus be established. The other resolution asks the establishment of a Federal department of health, to have at its head a secretary of public health—a cabinet officer. Both resolutions passed. Dr. Henry B. Baker's resolution, that the association hold its meeting in 1893 in Chicago, and that, so far as possible,

the occasion be made an international congress of hygiene and public health, was also adopted.

The officers elected for 1892 are as follows: President, Dr. Felix Formento, New Orleans; Vice-Presidents, Drs. Walter Wyman, Washington, D. C., and Domingo Orvananos, Mexico; Secretary, Dr. Irving A. Watson, Concord, N. H.; Executive Committeemen, Drs. J. D. Plunkett, Nashville, Tenn., and J. N. McCormack, Bowling Green, Ky. Place of meeting, City of Mexico; date to be decided by the officers. W. W.

The International Congress of Hygiene.*

It may not be generally known that there took place last August, from the 10th to the 17th, the most important meeting ever held in relation to Hygiene and Public Health.

It was held in London, England, and was called "The International Congress of Hygiene and Demography." The Maine State Board of Health, in its desire to keep its work up to the highest standard, sent a delegate. These are some of the things that impressed him most, and some of the notes he hastily made while rushing from section to section endeavoring to hear all the wisdom spoken. He will, perhaps, later, enter into details in reference to different discussions. In the first place, he was astonished at the magnitude of the gathering. He knew from his reading that, all over the world, the last few years had witnessed an increased and an increasing interest in matters relating to public health. He had attended the annual meetings of the American Public Health Association and seen the intense earnestness with which such matters were being investigated in his own country. But still he was not prepared for what he saw. Indeed, he felt almost ashamed to state his reason for going abroad to the pleasant companions he met on the steamer going over. He fancied as he spoke of it that they looked at him with a sad kind of interest. None of them had ever heard of such a congress, and while they did not deny that one was to be held, some of them seemed to feel it their duty to prepare his mind for the discovery that it would be a very small affair. He even questioned with himself as to whether it would not be advisable to delay his reaching London till the meetings were under way in order to avoid the humiliation of the small opening.

But he finally concluded to "face it out" and went straight to the great metropolis, and without delay sought the office of the secretary to register. There his worst fears seemed confirmed, for although it was nearly 9 o'clock in the morning when he entered the office in Hanover Square, only a single clerk greeted him, and he fancied that he eyed him with a kind of exultation as the first delegate to arrive. But when to his hesitating inquiry, "Are there other delegates in the city?" he was answered, "Yes, nearly two thousand," he began to hold up his head and feel his importance.

He learned later that the London day does not "officially" begin till 9 A.M., and hence the single clerk with nothing to do.

This was Thursday, August 6, and the opening day not till the 10th.

When that day came, the nearly two thousand had become nearly three thousand, and oh! what a crush! The twenty clerks and as many more secretaries were simply overwhelmed. They tried to avoid a too great jam in any one place by arranging a series of desks in the form of a hollow square in the large reception-room of the Royal Academy in Burlington House, and hanging over each one or more letters of the alphabet, and giving notice for delegates to seek the desks whose letters corresponded with the initials of their family names. But even this seemed to afford little relief. The despair of the late-coming delegate who sought his proper desk and read the alluring notice of some reception or garden party "limited to 400," and realized that fully 500 struggling delegates were in front of him, is better imagined than described. There it was that eminent members of the Royal Academy might have found "studies for mobs" without going far from their studios.

* We have already published a short report of this Congress; but the report of Dr. F. C. Robinson (delegate to the Congress from the State Board of Health of Maine) is so extremely interesting that we here reproduce it from *The Sanitary Inspector*.

Truly, London was taken by surprise. It had just got through entertaining the Emperor of Germany. Parliament had adjourned, the season was over, and suddenly this crowd appeared. At first they seemed inclined to resent the intrusion. But as soon as they comprehended what it all meant they went to the other extreme and entertained them in a manner never before equaled in that great city. There was, too, a kind of appropriateness in the Congress meeting so soon after the great military displays attending Emperor William's reception. The papers had been full of military matters, troops had been reviewed, mock battles fought, and the impression given that destruction and death were the chief objects of nations. He who could in a short time put several hundreds of thousands of armed men into the field must be shown that others could meet him if necessary.

Such displays seem necessary accompaniments of royal visits, even though the visitors are, as in this case, near relatives. The loving and loved grandson must be shown that, if need be, he could be given a "warm" reception of another kind. But hardly have the military sounds died away when the trooping crowds of the Health Congress come, and ideas of killing give place to those of saving. Thoughtful Englishmen seem delighted to realize that, after all, there were a great many persons who cared more for saving human life than for devising means to destroy it. In reality, London had witnessed the sudden replacement of mediævalism by the spirit of modern civilization.

The Prince of Wales was honorary President of the Congress, and was expected to open the session by an address. St. James Hall, Piccadilly, was secured for the occasion. Here was one of the first mistakes of those in charge, due evidently to their lack of faith. The hall would hold only about 2,000, and admission was to be by ticket. Of course, several hundred of those who ought to have been present were unable to get in, and complaints were loud and bitter. The Maine delegate found himself at first among the disappointed but not having a large stock of "expletives," he soon exhausted them, and, remembering from his boyhood the different ways of getting into a circus without a ticket, set about trying some of them, and "got there." If Albert Hall, capable of seating 8,000, had been secured, it would have been packed; and how appropriate it would have been, considering the interest Prince Albert had in such meetings, and that his own son was to make the address!

On the speaker's platform, facing the large audience, were seated the most eminent of the delegates; and, as they moved in greeting each other while waiting for the Prince, it was interesting in the extreme to a stranger to hear them pointed out and commented upon by those who knew them. There was Sir James Paget, of world-wide reputation among doctors, tall, with an old but strong-looking face. Near him sat Sir Andrew Clark, President of the Royal College of Physicians, and family physician to the Prince of Wales. The fine-looking President of the Royal College of Surgeons, Dr. Thomas Bryant, was not far away. Sir Richard Quain, Sir Spencer Wells, Sir Edward Saunders, Sir William Jenner, Sir Joseph Fayrer, with others, both titled and untitled, mostly the former—for England likes thus to distinguish her eminent men in all branches—were also there. Nor was the group all made up of doctors, for the fine-looking face of Sir Frederick Leighton, President of the Royal Academy of Arts, could be seen; and in another quarter, Sir Robert Rawlinson, the historian, and Sir Henry Roscoe, the chemist, smiled their approval upon the gathering. The Lord Mayor of London, with one or two of his sheriffs, and here and there a lord or two, added dignity to the occasion, and the picture was appropriately set off by several delegates from British India, dressed in their brilliant native costume. The eminent men from continental Europe were far from being lost in such a distinguished crowd, and it was not difficult to select with the eye their strong and aggressive faces, though their names could not be learned so easily.

Promptly at the appointed hour, 3.30 P.M., the Prince enters. He is dressed in plain black, with cutaway coat and no uniform or decoration, excepting the badge of the Congress pinned to his breast. The audience greets him with applause, and the band plays "God Save the Prince of Wales." He greets in a familiar way several of the distinguished men, giving an especially warm greeting to Sir James Paget, who once attended him through a most dangerous sickness. In a few moments he takes the chair reserved for him, and the meeting is called to order.

The General Secretary, Dr. Poor, gives a notice or two, then calls the Prince to preside, and, with a word of preliminary congratulation at the large numbers present, he begins his address, reading from a manuscript in a clear, impressive manner. It was a model address for the occasion—short, sensible, business-like. It seemed original, and doubtless was, for it is well known that his Royal Highness takes a deep interest in hygienic matters. In several places he was interrupted by applause, especially when he said that "if so many evils of human life are preventable, then why are they not prevented," and pledged his own best efforts in the future to that end. Other short addresses followed, given by delegates from different countries. These were, for the most part, uninteresting, owing to their similarity in matter and poor delivery. I suppose it was thought necessary to give each country a chance to say something, lest omitted ones might feel slighted, and there seems to be nothing abroad which so rankles as slight upon one's country. It seemed strange, however, that there was no speaker from the United States. I suppose they thought her too far off to feel slighted if left out. The Prince introduced each speaker, and did it very appropriately; in short, he showed himself an admirable presiding officer.

One thing was especially noticeable, that references to Pasteur and Koch were received with more applause than those to kings and princes, and that Sir James Paget, when he rose to speak, was received with more applause than the Prince himself. Perhaps, however, it was because he was the last speaker.

[TO BE CONTINUED.]

To Our Subscribers.

Our request for back numbers in previous issues has met with such generous results that most of our files are again stocked, but copies of the following issues are still wanted and will be bought for 25 cents each. Please get from us acceptance before sending, as in some instances more copies of an issue are offered than we desire. The issues now wanted are: September, December, 1884; September, November, 1886; February, 1887.

